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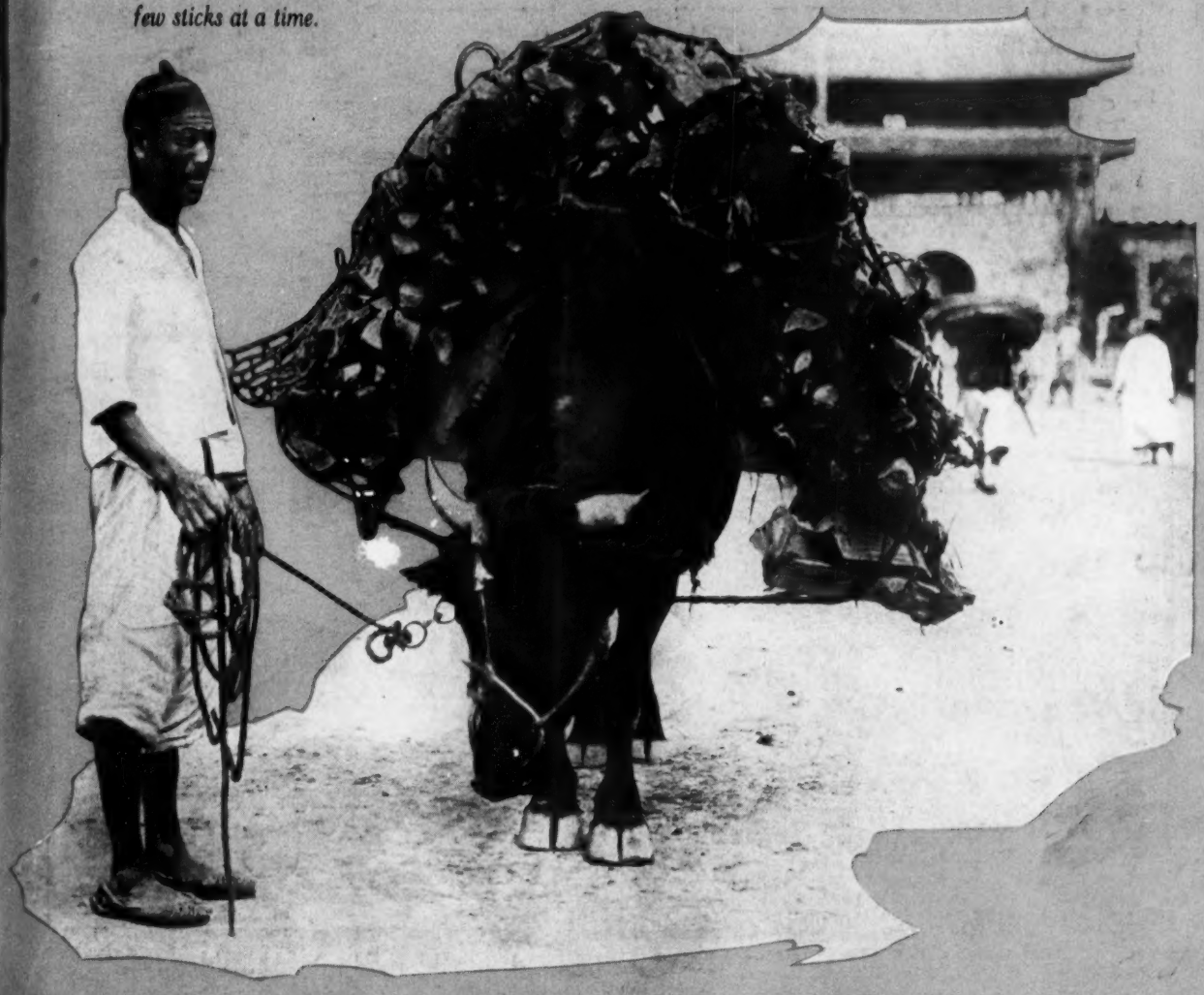
DOMESTIC ENGINEERING

The Plumbing and Heating Weekly

In Chosen, a dependency of Japan, they buy their fuel a few sticks at a time.



Progress of Heating in Japan

AUGUST 20, 1927

In step with progress

Corrugated heating surfaces

Long back-and-forth fire travel

The Weil-McLain Boiler offers your customers such basic fuel-saving features as corrugated heating surfaces and long back-and-forth fire *travel—features that set this boiler* distinctly apart and take it out of the split penny type of competition. The result, from your standpoint, is more and better satisfied customers and more profit for you.

Weil-McLain Company

Manufacturing Division
Michigan City, Indiana

Jobbing Division
Chicago, Illinois

Line up with

Weil-McLain

SCIENTIFIC COMBUSTION

BOILERS

"SEE THE WEIL-McLAIN BOILER JOBBER IN YOUR TERRITORY"

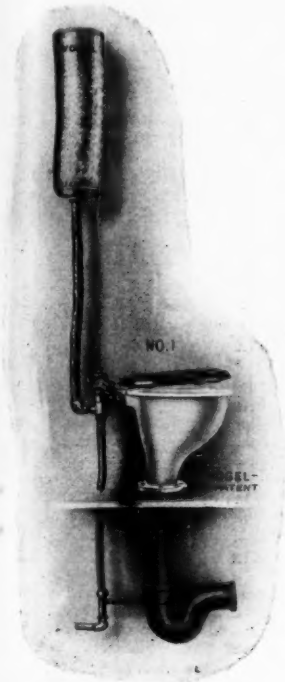
333

Man is his own worst enemy

That's an old saying but it is borne out every day. Everywhere, we have proof of its truth, even in our own industry, for plumbers couldn't have a greater injustice done them than they do themselves when they do not sell the **VOGEL** line of Frost Proof Hydrants and Closets.

That may sound a bit overdrawn but if you knew the big profits that are being made by **VOGEL** plumbers, you'd know we're telling you no stories.

Get in on these profits *now*. There's no money made in delaying. Write us today for proof of our claims for our line.



VOGEL *Frost Proof Closet*
No. 1

Our Catalog

Jovo—

JOS. A. VOGEL CO.

Wilmington, Del. **St. Louis, Mo.**

VOGEL PATENTED

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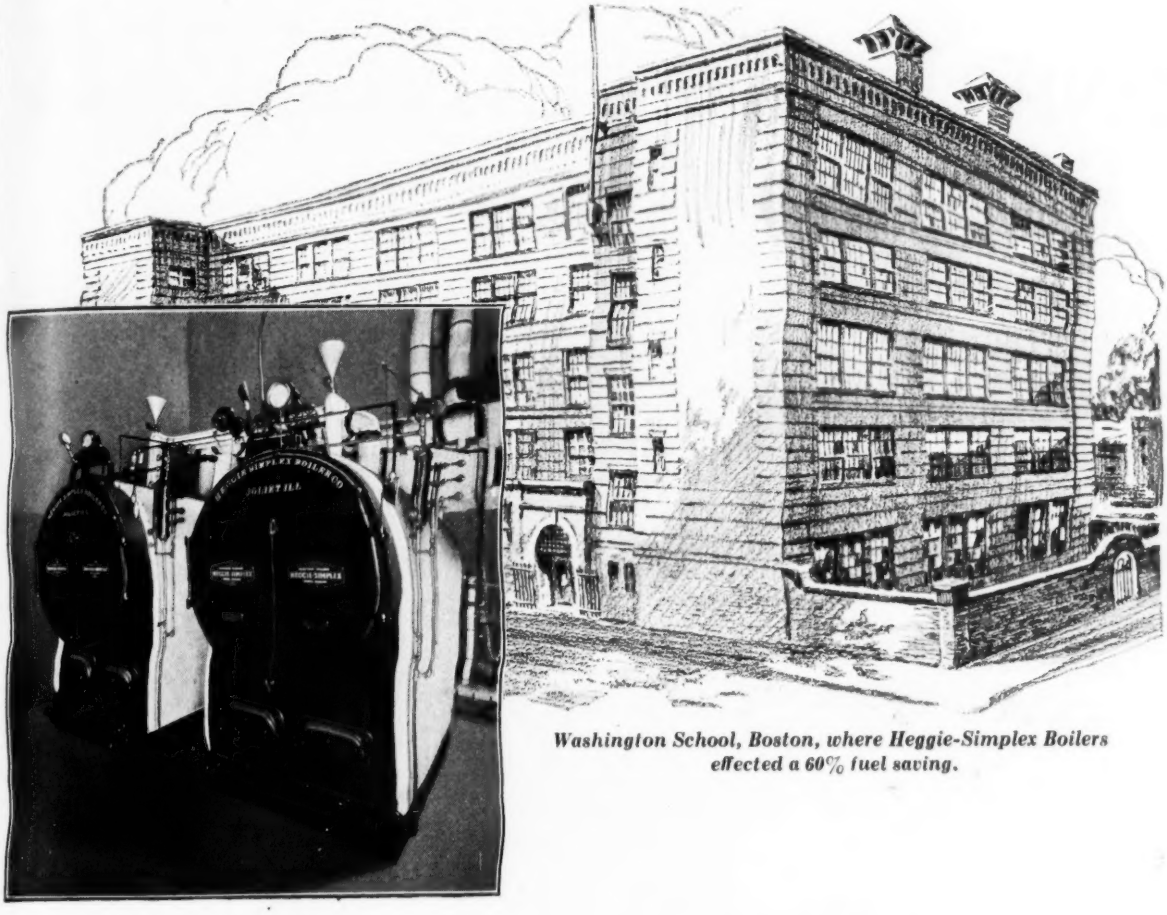


Washington School, Boston, where Heggie-Simplex Boilers effected a 60% fuel saving.

Boston Schools Report Marked Economy with "Heggie-Simplex"

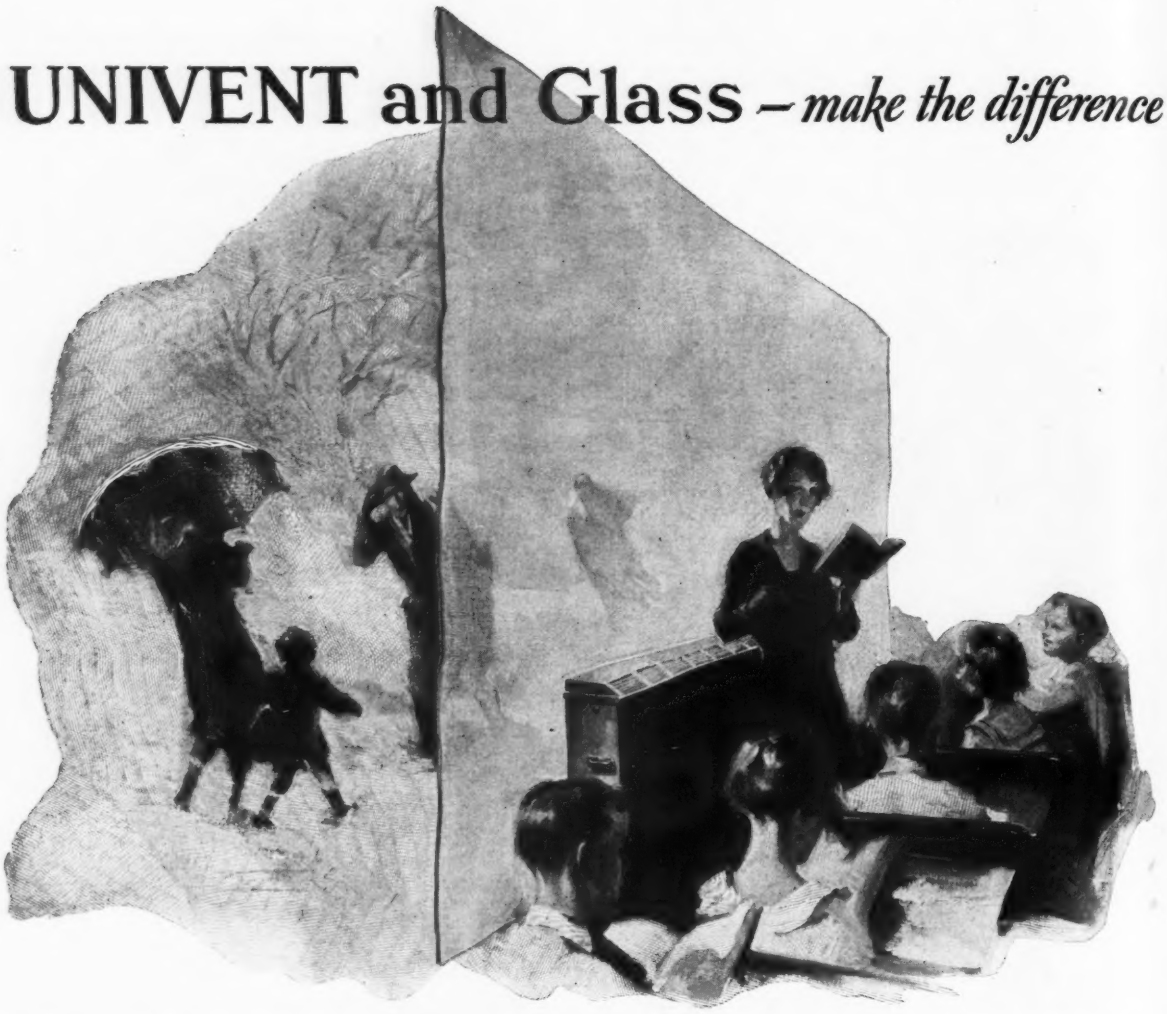
INSTEAD of constant firing from four-thirty in the morning, all day long, the janitor of this Boston School now starts at seven, enjoys from two to three hours off at noon, and shows an average daily saving of 60% in fuel since the installation of Heggie-Simplex Boilers. The ease and readiness with which these boilers raise and maintain steam, make this saving possible. Similar economies are being realized in other Boston Schools where this most modern and highly *perfected* heating boiler is in use.

Heggie-Simplex Boiler Co., Joliet, Illinois. Representatives in principal cities — telephone and address listed under "Heggie-Simplex Boiler Company."

HEGGIE-SIMPLEX

ELECTRIC-WELDED STEEL HEATING BOILERS

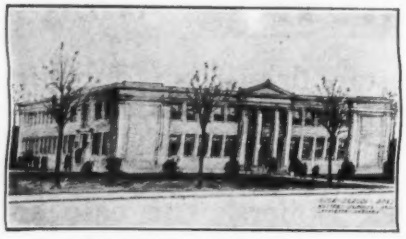
UNIVENT and Glass – *make the difference*



WINDOWS are shut—and glass keeps out storm, rain, smoke, dust and noise. Bad weather outside—yet within the class room a clean, dust-free, health-protecting *fresh air supply diffused to every* nook and corner with gentle air motion but without draft.

No listless boys and girls here—but wide-awake youngsters, invigorated by a constant supply of fresh *outdoor air INDOORS, robbed of* its chill and damp, and warmed to the exact temperature desired.

In warm weather, when heating is not necessary, the Univent provides a refreshing air motion that acts as a tonic on dull minds.



*High School, *equipped with . . .*

UNIVENT (TRADE MARK)

VENTILATION

The Univent is endorsed by school authorities, business executives, architects, and heating engineers as the most flexible, economical ventilating system known. Successful schoolroom and commercial installations testify to its effectiveness.

Write for the Architect and Engineer's Edition of "Univent Ventilation," and full particulars, or *better still, submit your plans for* intelligent study by our engineering department.

* * *

**High School, Portland, Indiana*
Walter Scholer, Architect, Lafayette, Ind.

Manufactured only by THE HERMAN NELSON CORPORATION, *Moline, Ill.*

Builders of Successful Heating and Ventilating Equipment for 20 Years

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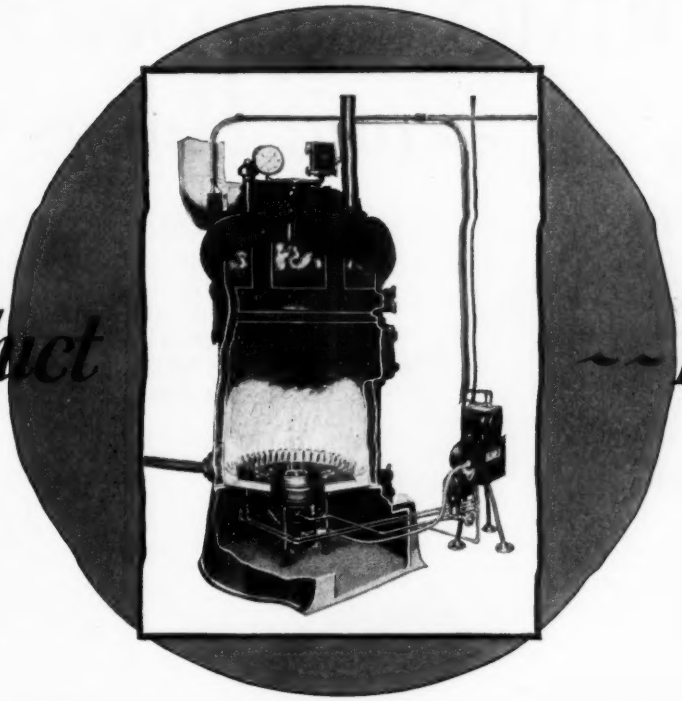
A Perfect Combination of



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~~Sales Co-operation

"I can't help but make money," says one Silent Automatic Dealer, "because your proposition is a perfect combination of quality product, reasonable selling price and beneficial sales co-operation."

That's the Silent Automatic sales story in a nutshell. Silent Automatic is the oil burner that applies a silent, gaseous flame directly to the heating surfaces . . . . the only method that can be adapted economically and efficiently to the 22,000,000 heating systems already installed in this country.

Its price of $395 makes every home owner a prospect . . . and is one of the reasons why Silent Automatic is *becoming the fastest* selling burner in America.

$395
One Size For Any Home
Complete with automatic safety and operating controls. Nominal installation costs depend on basement conditions, oil storage equipment and local regulations.

Silent Automatic provides a direct Factory connection, in addition to vigorous advertising co-operation, with training and fare paid one way to the World's Largest Domestic Oil Burner Laboratory. A permanent, profitable association.

May we send you complete information . . . and show you how you can share in Silent Automatic's success?

Listed as Standard by the Underwriters' Laboratories

SILENT AUTOMATIC CORPORATION
255 Meldrum Avenue Detroit, Michigan

SILENT AUTOMATIC

THE NOISELESS OIL BURNER

(231)

TRIMO

The TRIMO Spud Gets In
--- and Hangs On !

The TRIMO Spud is thin enough to get into tight places where a monkey wrench wouldn't fit; and it is strong enough to hang on where a spud wrench is necessary. TRIMO wrenches don't let go until you want them to; then a touch of a finger releases the grip.

The Trimo Spud Wrench belongs in every plumber's tool kit

It has only three parts and all of them are replaceable. That is typical of *Trimo* tools.

The new TRIMO Thin Blade Cutting Wheels make pipe cutting easier than ever before. Made of special analysis steel, they guarantee long wear and lasting sharpness.

Made to fit the Barnes and Saunders type cutters as well as the famous TRIMO Pipe Cutter. Buy from your Supply House. Write us for information.

TRIMONT MFG. COMPANY
Roxbury (Boston), Mass.

America's Leading Wrench Makers for Nearly Forty Years

Two Outstanding Features of the

THATCHER SECTIONAL BOILER

—Triple Fire Travel
—Great Heating Surface

IN this end feed sectional boiler an unusually large amount of prime heating surface is directly exposed to the flames and hot gases, which is one reason for its quick steaming and high heating efficiency.

The flames, hot gases and smoke are compelled to travel the entire length of the boiler three times, before entering the smoke flue, which assures the greatest possible transmission of heat to the water. This feature results in an appreciable fuel saving.

The deep fire box and large feed door mean less frequent firings and easy access to all parts of the fire bed—features that spell ease in firing.

Thatcher Sectional Boilers are made for both steam and hot water in all sizes to burn anthracite, pea or soft coal.

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Since 1850

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Write for trade information and descriptive literature about Thatcher Sectional Boilers and other Thatcher products.

THATCHER
BOILERS-FURNACES-RANGES

Retails at *only*

$70

cash f. o. b. factory, complete with electric motor

From.. shallow well, cistern, lake or stream to this inlet.

To... sink, bathroom, barn, fire faucet, trough, etc., from this outlet.

Sell—

$20 down

$5 per month

Under the **Fairbanks-Morse Finance Plan** you can sell this system for the low first payment of $20 and easy monthly payments thereafter—and *get ALL your money at once.* Mail the coupon for complete information.

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Your sales doubled! Why? Because the new Fairbanks-Morse Home Electric Water System has proved beyond question that it embodies the real sales-winning combination: 1. Price within the reach of all who have electricity and *need* running water. 2. Genuine F-M quality throughout, insuring real customer satisfaction and reducing servicing costs to rock bottom.

Here at last is a quality system that comes within pocket-book-reach of the people who make up your biggest and most profitable water system market—people who have long wanted running water comforts and conveniences in their homes. Now they can have them!

Big capacity—F-M quality

*Never before have dealers had the opportunity to sell at so low a price a 210-*gallon-per-hour system so modern, so finely built. Never before has a home water system value so outstanding been offered—value unequaled because of Fairbanks-Morse quantity production, efficient manufacturing methods and world-wide distribution.

Ask us for full details on how you can make this *new* F-M System, and the national advertising which backs it, pay you profitable returns. Do this now. Mail the coupon today.

FAIRBANKS, MORSE & CO.

Manufacturers Chicago, U. S. A.

Branches and Service Stations Covering Every State in the Union

Only the F-M System has ALL these strong selling features

1. Completely enclosed. All parts fully protected.
2. Compact—19 inches in diameter, 21 inches high.
3. Big capacity—210 gallons per hour.
4. Entirely automatic—starts itself—stops itself.
5. Easy to install—only two pipe connections.
6. Completely equipped, including *electric motor, automatic* switch, pump and tank.
7. Quickly accessible—simply lift hood. The removal of one stud bolt exposes valves.
8. Quiet and exceptionally smooth running.
9. Self-oiling.
10. Supplies steady, full stream without pulsation.
11. Fresh water connection with every pump at no extra charge.
12. Can be used with large storage tank when desired.
13. Genuine F-M unit throughout. Fully guaranteed—the biggest home water system value ever offered.

A water system within reach of many more thousands means a widened market for plumbing fixtures and fittings. Build up this business with the low cost F-M Water System. Get facts today. Mail the coupon.

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Home Water Systems

Fairbanks-Morse Products F M *"Every Line a Leader"*

PIN TO YOUR LETTERHEAD AND MAIL

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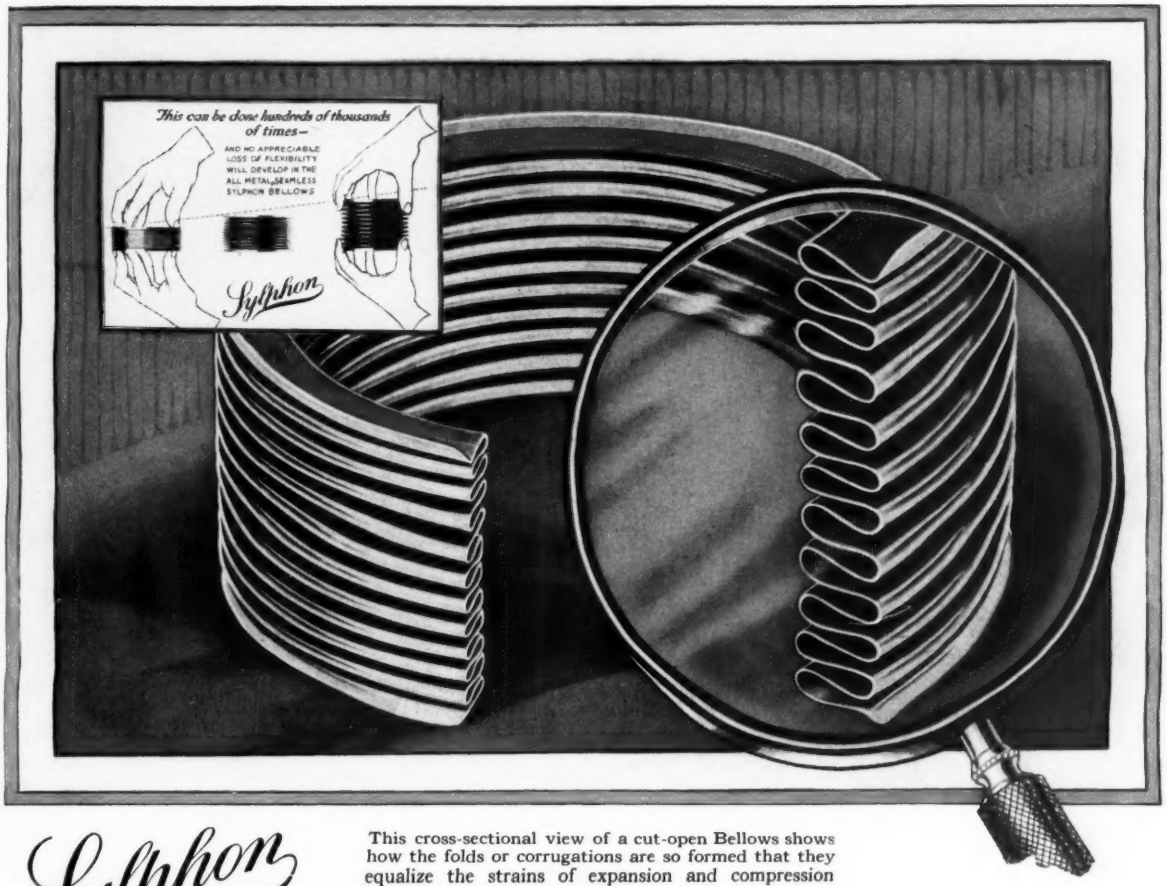
900 S. Wabash Avenue, Chicago, U.S.A.

Send full particulars on the new F-M Home Water System. Also details of your profitable dealer proposition.

Name.....

Address.....

City..... State.....


This can be done hundreds of thousands of times—
AND NO APPRECIABLE LOSS OF FLEXIBILITY WILL DEVELOP IN THE ALL METAL, SEAMLESS SYLPHON BELLOWS
Sylphon

Sylphon TRADE MARK

This cross-sectional view of a cut-open Bellows shows how the folds or corrugations are so formed that they equalize the strains of expansion and compression throughout the metal, giving almost indefinite life to the Bellows.

Steam Damper Regulators

FOR LOW PRESSURE STEAM BOILERS

NOTE the construction of the Sylphon Bellows—the diaphragm of all genuine Sylphon Damper Regulators. The *seamless, all-metal construction* makes the Sylphon Bellows the most sensitive, flexible and durable diaphragm in existence.

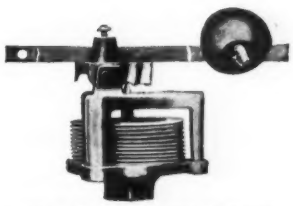
The service and life of any damper regulator depend completely on the diaphragm.

If the diaphragm doesn't stand up, the regulator cannot continue in operation. Rubber rots. Solder cracks. Diaphragms made of these or other perishable materials, as you know, are not capable of responding continuously through years of service to the expansions and contractions of varying steam pressures.

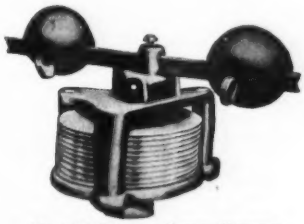
The Sylphon Bellows is a seamless, solderless, all-metal diaphragm. It *is sensitive, smooth and positive in action, responding to the slightest* changes in steam pressure. It opens and closes the draft dampers smoothly and dependably year after year. There is no servicing of a genuine Sylphon Damper Regulator.

Insist on the genuine. Refuse imitations. Ask for Bulletin KDR-5.

No. 22-J Sylphon Damper Regulator for low pressure steam boilers with light dampers.



No. 22 Sylphon Damper Regulator for low pressure steam boilers.



No. 924 Sylphon Steam Damper Regulator, extra sensitive type.

The Fulton Sylphon Company

Originators and Patentees of the Sylphon Bellows

Knoxville, Tennessee, U.S.A.

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How architects and heating contractors may use a simple problem to their advantage and *profit*

The Problem

Why does this funnel overflow?

The Answer

There is more water flowing in at the top than can possibly flow out through the narrow neck of the funnel at the bottom

THERE is only one way that architects and contractors can overcome the competition of the over-rated boiler. That way is to make boiler prospects appreciate the difference in efficiency and cost of operation between a Fairly Rated Boiler having sufficient Fire Surface and an over-rated boiler which hasn't enough Fire Surface. This is a difficult thing to do but we have found a way to do it very effectively in our magazine and newspaper advertising. Architects and heating contractors can use the same method to their advantage and profit.

In the illustration above, water is being wasted because more is flowing in at the top than can possibly flow out the narrow neck at the bottom. Turning on more water will get practically no more into the bottle. Because only so much and no more water can pass through the neck of the funnel.

So with a boiler. The Fire Surface corresponds to the neck of the funnel. The heat given off by the fuel burned corresponds to the water. When there is insufficient Fire Surface heat "overflows" and is wasted up the chimney. Generating more heat by forcing the fire only means greater waste up the chimney. Because the Fire Surface, like the neck of the funnel, can absorb only so much heat and pass it into the home.

By means of this simple illustration it is very easy for the layman to visualize the fuel he will waste if he has an inefficient boiler. It is easy for him to see why, when an extra cold snap occurs, forcing an over-rated boiler will waste more fuel but give him very little, if any more heat.

By means of this simple illustration you can prove to a prospect that if he wants comfort and heating economy he *must* have a boiler with Sufficient Fire Surface Fairly Rated.

To further help architects and heating contractors to thoroughly acquaint their clients with the economical necessity for a Fairly Rated boiler we have issued a 32-page booklet, "The Truth about Boiler Ratings"—a valuable book for architects and heating contractors to lend to their clients. The coupon below will bring you a copy by return mail with our compliments.

THE H. B. SMITH COMPANY
Home Office and Works: Dept. A-37, Westfield, Mass.
Sales Offices and Warehouses at:
WESTFIELD BOSTON NEW YORK PHILADELPHIA CLEVELAND

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BOILERS & RADIATORS
Used in fine homes and buildings since 1860

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Gentlemen: ☐ Send a copy of your new booklet on Boiler Ratings.
☐ Also send me copy of your booklet "Does it Pay to Install an Oil Burner."

Name.....

Street.....

City.....*State*.....

A Letter from Harry G. Nye

August 20, 1927

TO THE PLUMBERS AND STEAMFITTERS OF THE U. S. A.

Fellow Citizens:

The other day I was handing out some hot weather hints, but I realize that there was a lot of things I missed, as the fellow said after he hit the trolleycar. For one thing, keep away from the bathing beaches. Now, I know that people go to the bathing beaches to keep cool, but I am not so sure about that.

I was down at Atlantic City not long ago, on the Boardwalk. I used to wonder why they made the boardwalk so wide. I supposed at first that it was on account of the crowds, but it isn't. They make the walk wide enough so that a man can walk on it without looking; that is, without looking at the boardwalk.

I know a plumber who went down to Atlantic City for nervous prostration. I don't mean he actually went down there for it; because, of course, he had it already. It isn't hard to get nervous prostration in the plumbing business, although but few of us plumbers have enough money to call it that. We're just off our feed, that's all.

Well, this plumber took his nervous prostration down to Atlantic City to see what the boardwalk would do for it. It cured the nervous prostration all right, but it took five weeks of plastic surgery to get his face back where it belonged. A man isn't supposed to go through life with his face looking over his right shoulder.

Of course you will probably say that when he walked back he was looking over his left shoulder going back, so how could he ever get that way. But he didn't. When he got to the end of the boardwalk, then he walked backwards to where he started from. He didn't want to turn around for fear he would miss something out on the beach.

So I am not so sure that Atlantic City, wonderful health resort that it is, is the place for a plumber with nervous prostration, or with his wife, unless he wants his wife to get it. It takes a man's mind off his work all right, but, at the same time, it gives his wife a good many occasions to work off her mind.

What was I doing in Atlantic City? Well, there are plumbing shops in Atlantic City, aren't there? And they use plumbing tools, don't they? And they want the best, don't they?

Truthfully yours,

Harry G. Nye

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Nye thin blade cutter wheel, made to fit all standard makes of pipe cutters, and guaranteed against breakage in use. Made both in smooth and knurled edge.

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GEARED THREADING DEVICE
Improved
Capacity 2½ in. to 4 in., inclusive.
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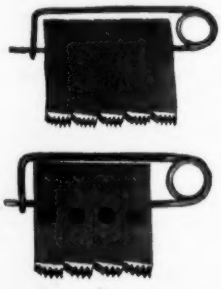

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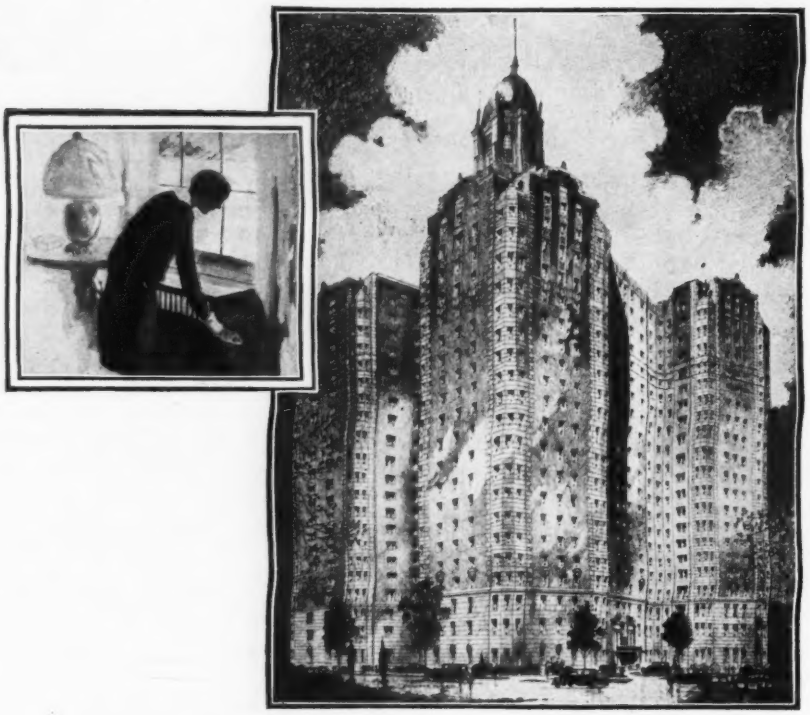
970 Trane Heat Cabinets in one installation!



Touraine Hotel, Lake Shore Drive, Chicago. Hooper & Janusch, Architects. Kohlbry-Howlett Co., Heating Contractors. 970 Trane Heat Cabinets. 1475 Trane Bellows Packless Valves. 1495 Trane Bellows Radiator Traps. 21 Drip Traps. 1 Trane 4-motor Vacuum Pump.

The Touraine, notable among Chicago's new apartment hotels, affords a striking example of the recognition accorded Trane Heat Cabinets and Concealed Heaters in a single heating season.

The owners of this costly structure sensed the trend toward greater spaciousness and freedom in room decoration—toward vastly improved heating comfort. They specified Trane Heat Cabinets—"Successors to the Radiator" — for installation throughout the building.

This revolutionary equipment — not hidden or recessed radiators, not radiator shields or screens — employs an entirely different heating principle. Built in two types — Concealed Heaters, perfectly hidden between the walls — and Heat Cabinets, finished in any tone or grain to match fine furniture. Adaptable to any heating system where radiators are ordinarily used.

Write for booklet showing typical rooms and completely describing this remarkable new development.

HEAT CABINETS **TRANE** CONCEALED HEATERS

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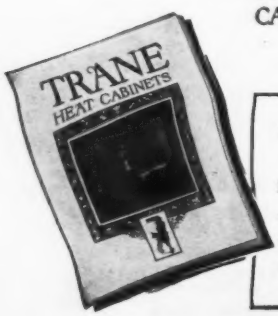

THE TRANE CO. (Est. 1885), 204 Cameron Ave., La Crosse, Wis.
Send your booklet on Trane Heat Cabinets and Concealed Heaters.

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Between Ourselves

The man who is so busy that he does not have time to read his trade paper is like the man who was so busy chopping wood that he did not have time to sharpen his axe

THOSE TWO GENIAL WORKERS IN THE plumbing and heating field, "Me" and Hank, of the firm of Dolan & Olson, reappear this week after a long vacation. The boys attended the national convention in Minneapolis and a large part of the story has to do with what they thought about it, and what the Old Timer had to say about it. Then there are the usual trouble jobs which make Hank and Jerry exercise their headpieces with such amusing results in the columns of Your Weekly. I don't suppose that anything we publish is more typical of the policy we try to maintain—the policy of giving you nothing but practical reading matter. These are good stories; and every man I've ever talked to out in the field has, in one way or another, expressed the same thought. "Whoever writes those Dolan & Olson stories sure knows what he's talking about—" and off they go into relating an experience of their own which was almost identical with something Jerry has been writing. Jerry may draw on his imagination when it comes to embroidering his yarn—but underneath the embroidery is experience and a knowledge of the work of the plumbing and heating man that is gained only in the school of calloused hands.

TRAVEL, THEY SAY, IS A GREAT EDUCATION, although a lot of men will admit that after traveling half-way around the world the biggest lesson they learned was that there's no place quite like the old homestead. Then, too, a lot of us haven't the time—not to mention the money—to indulge the craving to see new places and strange sights—although you hardly have to leave the front porch to see some strange sights right at home. Anyway, to get at the point I want to get at—something does rub off on the man who travels. If he can't travel, then he does the next best thing. He learns what he can about other bailiwicks by reading. Not that it's apt to make a great deal of difference what you know about "The Progress of Heating in Japan," an article in this issue; only it is true that knowledge of what others are doing often throws illumination on what we ourselves are doing, even if it's only to make us feel thankful that we have covered the ground over which Japan is traveling now. Perhaps some of the old timers will remember conditions which weren't much better.

WITHOUT GOING SO FAR AFIELD AS Japan, there are interesting things to be learned. Just over the fence is Canada, working out its problems of sanitation just as each of our states has had to work them out. You will remember that Mr. Starbuck collected a great number of plumbing codes in this country and developed some mighty fine information when he got into comparisons of the various codes. Now he has gathered codes from seven of the eight Canadian provinces and has some interesting remarks to make concerning their differences, and their likenesses and differences when compared with our own plumbing codes. So for this week your travel route will be to hop over to Japan —hopping across a mere ocean doesn't mean much these days—and when you've found out what's doing in Japan, hop back over the Pacific and make a short run through Canada to get a line on what rules they have made to advance sanitation to the north of us.

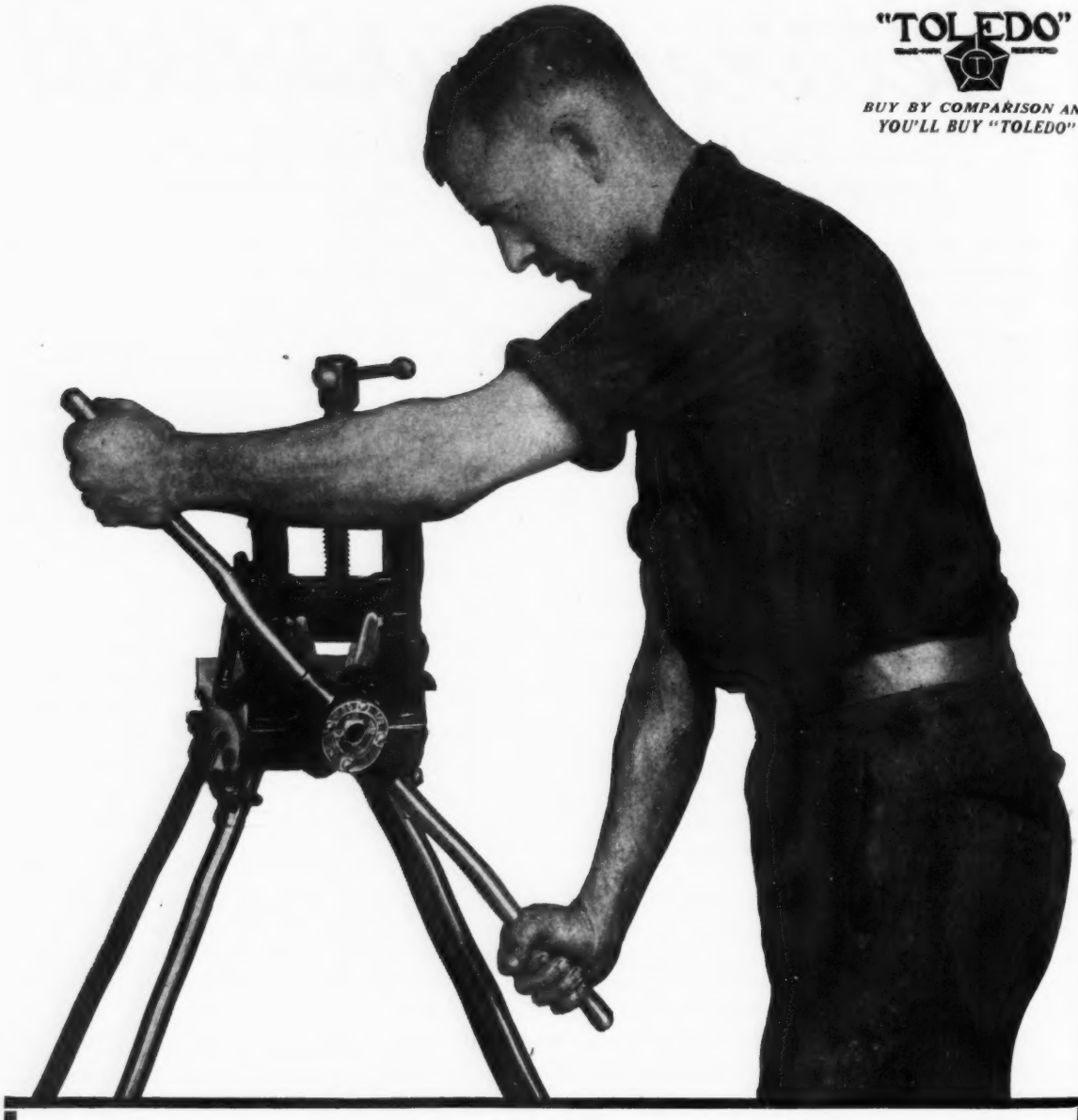
THEN HOME TO LOOK INTO THE SUBJECT of "Heating with Gas Radiators." There's many an out-of-the-way room or exposed corner where an individual heating unit such as the gas radiator would fill a much-felt need. Then too, it is often desired to use a part of a building during the week-end period when the greater part of that building is idle and unheated. It is in such cases wasteful to have to fire up the heating plant just to heat a room or an office or two. Once again the gas radiator will find a need. E. Williams, in this week's issue, goes into details concerning the construction of this type of radiator, and shows how it may be used alone, or may be tied into a heating system so that it will operate either as an ordinary radiator or "on its own."

IN A CURRENT ISSUE OF ONE OF THE Journals given over to advertising matters there is a story which will give point to the motto which appears at the head of this page concerning the man who is too busy to sharpen his axe. It seems that a certain business executive had a problem to solve. He called in an "expert." The expert solved the problem—and charged the executive $1,000 for his solution. All during the conference with the expert, there lay on the executive's desk a business paper published in his field. In that business paper there was an article touching upon the problem of the executive, and showing how it had been solved by another firm. Being "too busy to read" cost that man $1,000—and no doubt it took him some time to produce that amount in profit. Yet his business paper—and yours —employs experts. The moral, surely, is clear.

Your Editor

"TOLEDO"

BUY BY COMPARISON AND YOU'LL BUY "TOLEDO"



"TOLEDO" 3-WAY TOOLS—

ARE FINE TOOLS FOR THREADING SMALL PIPE

You will like "TOLEDO" 3-way tools for being so light, compact and easy to operate. The No. 30 threads 3/8", 1/2" and 3/4" pipe and weighs but 4 3/4 pounds. The No. 31 threads 1/2", 3/4" and 1" pipe and weighs but 7 pounds. Each die head is "on center", thus producing a perfectly balanced tool. The tools will readily clear themselves of chips and will not become clogged with dirt.

You will find "TOLEDO" 3-ways thread pipe with surprising ease and produce smooth perfectly tapered threads, assuring tight joints. Die segments easily removed and reground or replaced at slight cost.

Specify "TOLEDO" 3-way tools the next time you need small hand pipe threaders.

THE TOLEDO PIPE THREADING MACHINE CO.

TOLEDO, OHIO NEW YORK OFFICE: 72 LAFAYETTE ST.

DOMESTIC ENGINEERING

Vol. 120, No. 8 Whole No. 1810 — The Plumbing and Heating Weekly — Chicago, Illinois, August 20, 1927

The Next Step

When the next three thousand room hotel is built, there is not going to be any question about its having a bath in every room and an up-to-date heating system. When the next big office building is built there is no doubt that it is going to have its accepted quota of sanitary fixtures and a modern heating installation. When the next six to thirty room residence in a nice neighborhood is built, it is going to have its one to ten bathrooms. All of which leads up to the obvious conclusion that expansion of plumbing and heating business to its full possibilities is not going to depend solely on efforts to sell such so-called *prospects.*

An ambitious industry, therefore, fortunate perhaps in such ready acceptance of its products and services, looks around for new worlds to conquer. And it discovers that several million people built homes in the days when there was not this ready acceptance, people who today are without plumbing and heating entirely or in part. Here is a job worth doing.

What They Buy

There are many business men who are still plugging away for business with the same selling methods which were effective years ago, apparently not realizing that changing business conditions demand changed selling methods. For instance, they continue to sell goods as goods, not as means of satisfying people's desires for comfort, luxury, utility or the like. And people are buying goods today because those goods satisfy certain desires. Efficient production methods have made it largely unnecessary for a buyer to consider only the manufactured make-up of staple goods—to think of goods only as goods. He thinks now of what those goods will do for him.

That is evident in all successful selling jobs with which we are familiar. The automobile people, for example, no longer sell just an engine and four wheels. They sell the wide open spaces and the joys which an automobile is supposed to make possible. The radio people do not sell only tubes and batteries. They sell entertainment from all over the world. And results testify that it is effective selling.

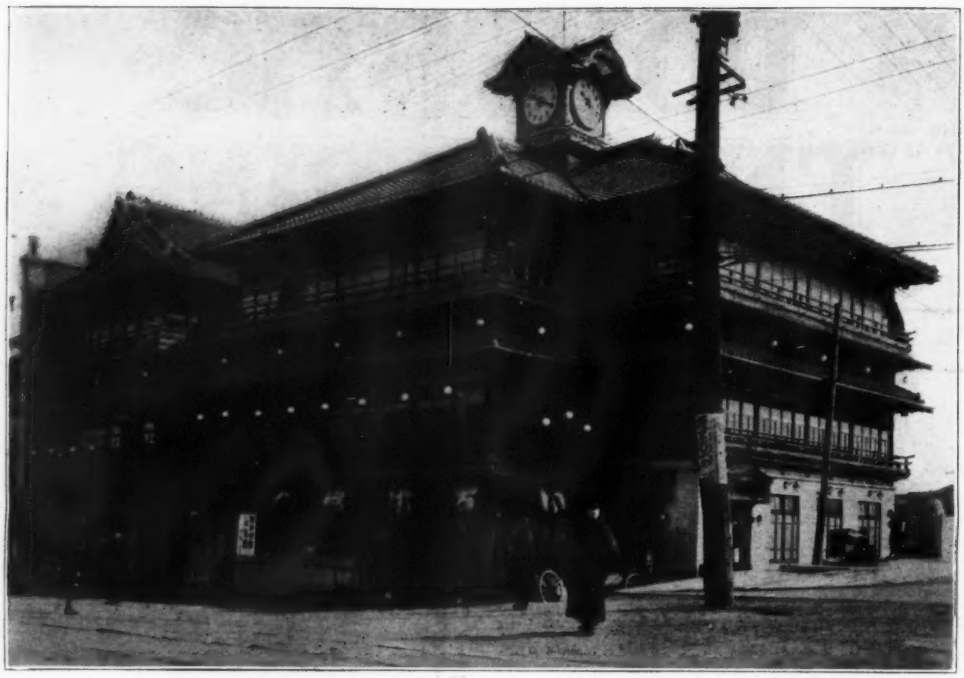
Yet how many master plumbers and heating contractors are still trying to sell plumbing and heating equipment as just so much equipment, instead of as a means of making the home a better place in which to live. Health, beauty, living comfort—some of the most desirable things in life—are what plumbing and heating make possible. They are what the public desires. Let us tell the public, then, that plumbing and heating goods are *not just goods—they are a means of* satisfying those desires.

The Highway Population

We recall vaguely a statement that the number of tourists in one middle west state, day in and day out, is close to *100,000. In other words, a state* has a fixed population of its own residents and also has a fixed population of people from other sections of the country—people who are driving through, who are stopping off temporarily to visit, to look around, to buy goods and do other things which residents do. These tourists and visitors must be protected, must be housed, must be fed, must be clothed, must have their sanitary needs taken care of—must, in fact, be considered in most respects as permanent residents.

Our field's interest, of course, is in their sanitary needs. They are our interest because we have been elected to protect the health of the nation and because, just as their needs of other kinds mean business to other merchants, these people's sanitary needs represent an opportunity for business for us. Our job is not so easy as the job of the merchant who sells a hat or a meal—something which can be taken away or immediately consumed. The tourists themselves, as a matter of fact, are not our customers. But they should make the state, the city or such agencies as public camp sites, filling stations, etc., our customers.

Tourists' comfort stations, or the general sanitary requirements of the highway population, are something which merits considerable thought on the part of the master plumber. He should call the attention of his state or city to the size of this highway population. He should impress upon his state or city its obligation to look out for its highway population. Many people do not realize that this new division of purchasing power exists. The plumber should realize it and its possibilities.



A Japanese Restaurant

The Progress of Heating in Japan

By SAITO SHOZO

THE HEATING business in Japan had its beginning about thirty or forty years ago. About twenty years ago, lectures on the subject of heating engineering were given, one or two hours a week only, at the architectural department of the Tokyo Imperial University. Knowledge of heating in this country, was very meagre at that time. Only a few government and public buildings were furnished with heating equipment, and these only partially. In dwellings there could be said to be practically no such equipment.

About twenty years ago, Takata & Co. was the only concern capable of designing installations for heating systems, and to them all of this kind of work was entrusted. Since then the improvement of public living in this country, combined with the rapidly increasing knowledge of occidental sciences, naturally attracted the attention of engineers and architects to the business of heating. At the same time, many other technical colleges and universities opened courses of instruction in heating. The other contractors, Oka & Kurai of Osaka, Saito of Fukuoka, etc., made their appearance. They understood this business, which previously had been practically monopolized by Takata & Co.

Casting of radiators was tried, but these radiators were very poor in appearance and finish. During the past six years, however, this industry has been so developed that at present, Japanese radiators compare well in finish and appearance, with those that are imported. In the meantime, a continuation of the importation of radiators is mainly due to the higher cost of manufacture of radiators in Japan.

Regarding the manufacture of cast iron heaters, Japan is making insignificant progress. This business has been studied for ten years by the writer, but owing to the fact that there is less demand for cast iron heaters than for radiators, and due to the heavy expense necessary in the making of many patterns as well as in the equipment of manufacturing plants, the development of this industry is very much restricted.

There are many persons and companies whose names should not be forgotten in the history of the progress of radiator casting in Japan. They should be remembered for their constant efforts in bringing this industry up to its present state of development. Among these are Mr. Hasegawa, Mr. Murai of Osaka and H. Saito of Fukuoka. The writer was then at Fukuoka and was occupied in this work for H. Saito of the Takasago Iron Works, Ltd. (successor to Saito Shozo Osaki Iron Works), Maeda Iron Works all of Tokyo, Toa Iron Works of Osaka and Mr. Iida of Fukuoka (successor to H. Saito of Fukuoka Iron Works), by all of whom radiators are now being made.

HEATING CONTRACTORS IN JAPAN

MOST of the heating contractors have their offices in the capital, Tokyo, as 80 per cent of orders are given by the government. As previously stated, the heat-

ing business was monopolized by Takata & Co. about twenty years ago. However, before the dissolution of this firm, this business had already been undertaken by Osaka Dambo Shokai of Osaka, Kenzaisha and Takasago Dambo Koji, Ltd., of Tokyo (the latter successor to Saito Shozo Osaki Iron Works), Toa Iron Works and Hagihara Shokai of Osaka, Nippon Dambo Shokai, Uchida Shoji, Ltd., and Saito Shozo Jimusho of Tokyo, etc.; in Chosen, H. Sugiyama, and in Dalny, Katsumoto Kogyojo. Many other contractors appeared with the dissolution of Takata & Co.

Takasago Dambo Koji, Ltd., Sanki Kogyojo, Osaka Dambo Shokai, Toa Kogyojo, and Saito Shozo Jimusho are at present the contractors appointed for handling the heating installations for the architectural bureau of the Department of Finance, and are designers of all the prospective government institutions.

This sort of thing will disappear before the progress of heating methods

Designing and consulting engineers are very rare; Sekido Jimusho, formerly engineer to Takata & Co. and Sakuma Kogyojo, formerly engineer to Saito Shozo Jimusho, are prominent. One of the chief reasons why the business of giving consultations on heating installations has not shown as much progress as might have been expected, is that there is a habit among Japanese contractors to design or give consultations regarding them free of charge for their customers. Naturally the consulting engineers who do this are not so highly esteemed as those who do not indulge in this practice.

Although the city of Tokyo, since it was destroyed by the earthquake and fire of 1923, is on its way toward reconstruction, there is not a sufficient number of orders to be had to keep the more than thirty contractors engaged busily in their work. This is due to the slowness in the process of restoration. Consequently there exists between some contractors, some distasteful competition in which the much needed development of the heating industry is lost sight of, and orders are procured in many instances by price cutting.

A heating system was first imported from Germany. This resulted in failure, due more to the rudimentary knowledge of the installation than to the system itself. This was replaced by an American system. Since that time Takata & Co. continued to use the latter system. As a result, most heating systems in Japan are now of American design. German systems, however, are being used. It was largely through the work of Mr. Teten, engineer of Kenzaisha, that German systems were introduced in Japan. The writer has also been paying much attention to the development of German systems by sending one of his engineers to Germany to study this special engineering, and by accumulating a library on this subject.

The heating system that has been adopted in Japan is mainly steam heating, of which gravity systems and vacuum systems are both used. Hot water heating has been used less than steam heating, but hot water heating has already shown an indication of fair development. Regarding hot air heating, it is highly recommended in Japan, especially in shops where air conditioning is found necessary.

Many kinds of heaters and radiators of American manufacture are used in this country. All the leading American makers, and some British manufacturers, are represented in the heaters and radiators used. Some of these heaters cannot be said to be entirely suitable for the fuel of Japan, or it might be more fitting to say that these heaters have not been properly installed or used here.

The Osaka Ventilating Co. office and force

Such experiences have, for some time, induced Japanese manufacturers to produce some heaters suitable for Japanese fuel. The result of this effort soon will be seen.

Iron pipes, both of Japanese and American make are used, while our pipe fittings are nearly all made in Japan. Valves, with the exception of radiator traps, are also made in Japan. Varieties of radiator valves both of foreign and Japanese make are used, but on the whole, the latter are not excellent. American thermostatic valves of a certain type were first used.

Among the teachers of heating engineering in Japan, Professor K. Ohtsuka of Kyoto Imperial University, Professor S. Niwa of Tokyo Imperial University, S. Kitaura, engineer of the Department of Finance, are prominent. K. Sekido, M. Yanagimachi, O. Kobayashi and N. Hamamoto, who in their private offices specialize in the study of heating engineering, should also be mentioned.

Ten years ago a society was organized, at the writer's proposal taking in refrigerating engineers. This society was named Dambo Reizo Kyokai, or the Japanese Society of Heating and Refrigeration Engineers. The number of members of this society has increased yearly and at present the membership is over 500. The society is giving direct and indirect aid in developing heating engineering in this country. Its name will probably be changed to Eisei Kogyo Kyokai or the Japanese Society of Sanitary Engineering, and will consist of scholars and business men who specialize in heating and sanitary engineering.

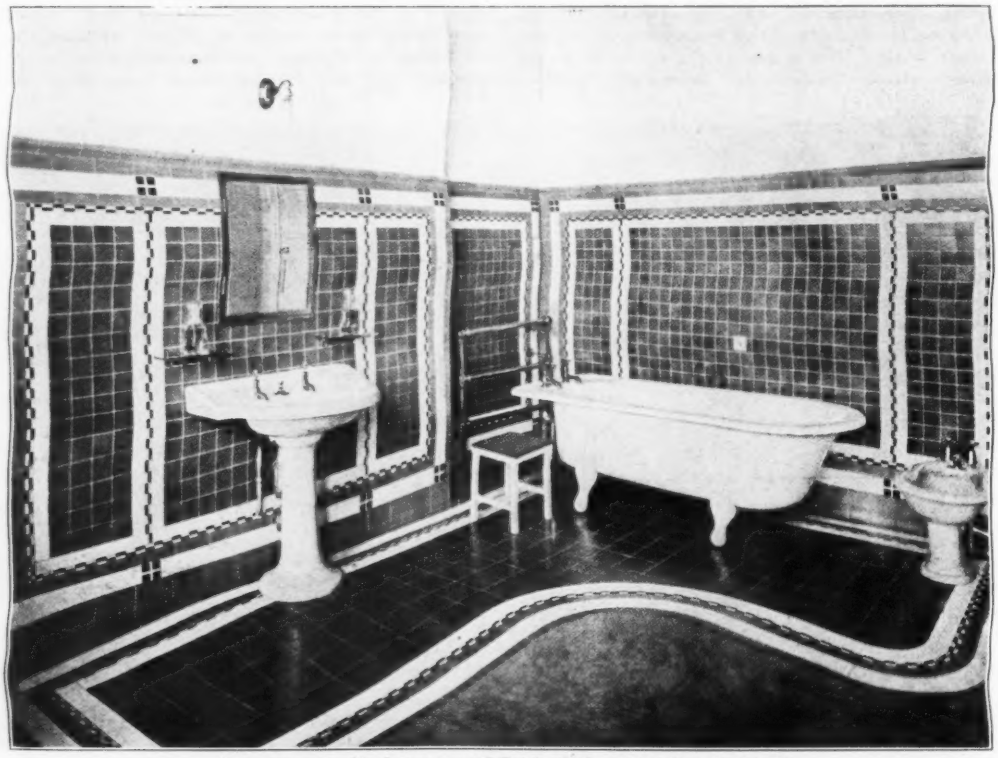
In conclusion it might be mentioned that it is the custom in this country, to construct most of our dwellings of wood, consequently no remarkable progress has been made in building construction. However, remembering the bitter experience of 1923, the Japanese people are inclined, so far as possible, to construct quakeproof and fireproof buildings. We therefore, expect our business to prosper and grow more steadily in the future.

INTERSTATE CARRIERS RESPONSIBLE FOR PURITY OF WATER SUPPLIED TO PASSENGERS

Health News of the New York State Department of Health recently cited two cases where municipalities have been held liable for cases of typhoid fever contracted from polluted drinking water.

In one instance, which occurred in 1915, the court awarded $1,500 to each of 9 libelants who contracted typhoid fever from drinking water pumped through seacocks while the vessel was in St. Mary's River about 12 miles below the Soo and furnished to passengers without purifying. Officers and crew were warned, but the passengers were not. In the second instance, 49 members of an excursion party on the Great Lakes subsequently filed claims against the steamship company, claiming that they contracted typhoid fever while on shipboard. In this case, an agreement was reached between counsel and $110,000 was accepted in full settlement of claims. The steamer was sold to pay the claims.

An English Plumbing Showroom



A corner of a display room of Bovis, Ltd., in London, England

Heating *with* Gas Radiators

By E. WILLIAMS

VERY often the heating contractor is face to face with the problem of heating an out of the way room or several rooms that can not be reached by piping from the heating plant without great difficulty. In church or *lodge-hall heating, where the auditorium may be used only once a week,* and a certain office or other rooms that may be used daily are to be heated, the cost of keeping the boiler fired up continuously for one or two rooms is considerable. Some office buildings are not heated during

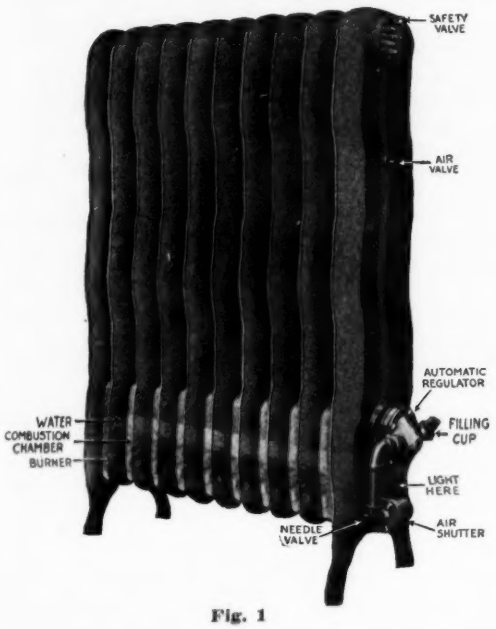


Fig. 1

Saturday afternoons and Sundays, and in all these cases, some means of heating the rooms should be provided.

The gas steam or hot water radiator has been called upon, in many instances, to solve these problems, and no doubt is a logical means of providing heat without running the boiler. This method not only saves money on coal bills but on janitor service as well. In homes heated by stoves, some rooms very often are not comfortable, requiring more heat than the stove will provide. To install another stove is costly, requiring stove pipe and holes through partitions. In these, as well as many other places, a gas steam or hot water radiator may be used to good advantage.

Such an installation quite often proves to be less costly than any other means of heating. A gas radiator can be turned on and off whenever the home owner may wish to do so, and during the spring and fall months will take the chill off of the rooms without the trouble of starting the boiler.

Gas steam and hot water radiators have outgrown the experimental stage and are today as foolproof as it is possible to make them. They are regarded as perfectly safe, the fire hazard having been reduced to a minimum—in fact, you may say it is practically nil.

Fig. 1 shows a gas steam radiator with the gas inlet valve automatically controlled so that as soon as a steam pressure of 6 to 10 lb. is reached, the gas will be turned down to maintain this pressure. The radiators are tested for 100 lb. cold water pressure to assure absolute safety. Should the pressure at any time become greater than 10 lb., the safety valve installed at the top, as shown in Fig. 1, will relieve the excess pressure. *The automatic gas* regulator is controlled and operated by the steam pressure in the radiator, acting upon a metal diaphragm to which the needle valve is attached. When the gas valve is closed, a pilot light is left burning by means of a by-pass through the valve, to ignite the gas, should the steam pressure drop and the gas valve open. Air is admitted to the burner through an air mixing chamber in the same manner as on the burner of a gas stove. In order to provide the necessary secondary air required for complete combustion of the gas to prevent gas odors, an additional air regulator is provided which can be adjusted to supply the necessary quantity of air. This regulator is shown at the bottom of the radiator.

All gas, steam and hot water radiators operate practically on the same principle. The radiator itself is the same as used on any steam or hot water installation, with the exception that the radiator walls are heavier and a heating chamber is provided in the bottom of the radiator into which the gas burner is fitted. These radiators require no other connection than a ¼-inch, ⅜-inch or ½-*inch gas pipe, depending on the size of the radiator.* Water is poured into the radiator through the opening left for this purpose.

This opening is located a sufficient distance from the bottom of the radiator, so that when the water reaches the opening there is sufficient water in the radiator to last from three to four weeks without refilling. The

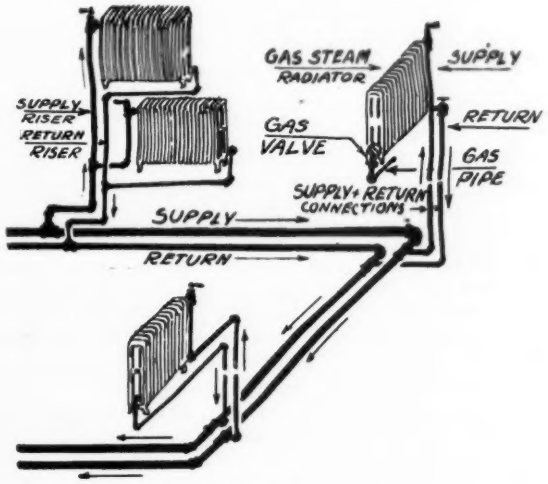


Fig. 2

steam generated fills the radiator and condenses by coming in contact with the cooler radiator walls, and this condensation returns to the bottom of the radiator. In this manner no water is wasted, except a small amount through evaporation. The air vent shown on the right hand side relieves the radiator of air.

GAS STEAM RADIATORS CAN BE USED ANYWHERE

THESE gas steam radiators can be installed anywhere in the room. It is not absolutely necessary that they be placed under the windows. A radiator, in order to give the best results, should be placed preferably in a position where the most cold air is likely to enter.

Regarding the operation, economy and cost of gas steam and gas hot water radiators, it may be said that the cost of operation is not much greater than for ordinary radiators, due to the fact that the heat of the gas that is burned in the radiator to produce steam or hot water, as the case may be, is also utilized for heating the room. This renders the gas radiator form of heating highly economical.

Under certain conditions it may be desirable to carry off the products of combustion, and for such purposes, gas radiators are equipped with vent pipes. Gas radiators are now manufactured in various different sizes and heights and almost any number of square feet of radiation can be purchased.

In some cases it may be desirable to operate the gas radiator part of the time with gas and at other times by steam or hot water from the heating system. To accomplish this, the radiator may be connected to the heating system in the manner shown in Fig. 2. When the radiator is to be operated by gas, the steam or hot water supply valve on the heating line must be closed tight and sufficient water must be in the radiator before the gas is ignited. On the other hand, if the radiator is to be supplied from the heating system, the gas is turned off. No other adjustments are required. In this manner the same radiator may be used for both purposes.

In Fig. 2, the right hand radiator is a gas steam radiator, and the other three are standard radiators. The connections to the supply and return lines are shown. The return line from the gas steam radiator must have a trap on the radiator, besides the valve shown on the return line. When the radiator is operated by gas, the return line as well as the supply line valve must be closed tight. On a single-pipe gravity job, the supply line is connected to the bottom of the radiator in the same manner as required for steam radiation.

Many out of the way places can be heated and other heating difficulties can be solved in the manner above described. No heat losses occur when a gas radiator is used. It is clean. No dirt is encountered and no coal storage is required. When there is a question of limited space, or where no boiler plant can be installed, heating by gas radiators may offer a solution of the problem.

GAS STEAM RADIATOR TESTS

IT MAY be desirable to give some data regarding tests made under actual working conditions to determine the amount of gas used per sq. ft. of radiation, also the decrease in oxygen, the increase in CO_2 and the increase in moisture. This test was made in Buffalo with a 25 sq. ft. gas steam radiator operated in a room 36 ft. by 24 ft. The gas used contained 940 B.t.u. The room was sealed and five men were present in the room during the test. The test extended over one hour and 47 minutes and during this time 10 cu. ft. of gas were consumed. The temperature of the room was raised from 69 degrees to 71 degrees. Gas consumed during the first hour was 5½ cu. ft. The increase in moisture was equal to 12 per cent. The decrease in oxygen 2.15 per cent, the increase in CO_2 one-fourth of one per cent. The increase in CO_2 in a room that is sealed amounts to .06 per man per hour. This shows that the increase in CO_2 is almost nil, when we consider that each man exhales .06 per hour. One thousand cu. ft. of gas, such as commonly used, contained 36 pints of water which is liberated during combustion.

In another test conducted in a frame building consisting of one room measuring 22 ft. by 30 ft., with a ceiling height of approximately 10 ft., the gas bill for the month of October was $4.00. The radiators were kept going night and day. The largest bill during the winter months was $6.80 per month. The gas cost 40 cents per 1,000 cu. ft.

In another test conducted in an eight-room house containing six gas radiators with a total of 136 sq. ft. of radiation, the gas bill during December and January amounted to $11.40 per month. The gas bill for October was $6.80. The gas contained 925 B.t.u. per cu. ft. and cost, as in the former instance, 40 cents per 1,000 cu. ft. These gas bills included gas used for lighting, heating, cooking and for hot water service.

From the above figures the cost in any locality may be estimated, taking into consideration the cost of gas per 1,000 cu. ft. and the B.t.u. in the gas.

EXHAUST FAN FOE OF DEADLY MONOXIDE

Despite the fact that garage doors and windows are usually kept open during the warm days of summer, public garages should be ventilated by positive mechanical action.

That is the warning of public health authorities and automotive engineers who have been studying the effect of temperature and other climatic conditions on the deadly carbon monoxide gas which is taking such a huge toll of American life.

The smaller type of garage can be made safe by the use of exhaust fans but larger garages, where numerous cars are operated, should provide a properly designed exhaust system of ducts connected to suitable exhaust fans, these authorities declare. Tests have shown that climatic conditions vary so much that vitiated air will not exhaust by natural means through vents located on the roofs. The air and gases must be driven out by fan action.

The plant engineers of such big producers as Willys-Overland, General Motors, Ford, Studebaker, Franklin and others have sent out warnings to their distributors and dealers to make it a point to see that proper ventilating systems are installed and operated in their garages and service stations. One manufacturer sent out this message:

"The repair room, where the mechanics are making adjustment of carburetor or testing engines, should by all means be amply ventilated at all times. In fact, special attention should be given to this room, to provide sufficient ventilation in order to protect the workmen properly. It is a good plan to have flexible metal hose connections, with a series of adapters, so that the exhausts of the cars being tested may be connected to duct outlets where there is sufficient mechanical draft to expel the gases.

"During the rush periods, when the greatest number of cars are either going out or coming in, the generation and accumulation of gases become the greatest. Therefore, during these periods the ventilating equipment should be operating continuously at maximum capacity, in order to exhaust the vitiated air as quickly as possible."

When Partner's Complaint Comes Too Late

Upon a partnership accounting, it is too late to complain that the system employed by one of the partners in carrying on the business resulted in loss; the complaining partner having had full notice of the system, and although complaining, having taken, periodically, over a long term of years, his share of the profits.—Court of Chancery of N. J., in Aron v. Wagner, 129 Atlantic Reporter, 741.

On the job with
Dolan & Olson

Hank lost all interest in the plumbing and heating business

Hank and Jerry attend the National convention and hear Old Timer tell about the old time convention. Jerry also tells about some trouble job

IT'S ALL OVER now and is just another convention with a whole lot of people, but to Me and Hank it was just about the biggest and best party that we ever attended, and here is how it all came about:

We had been reading about the coming national convention and looking at the pictures and then on this one particular morning the mail carrier dropped almost everything on our desk except envelopes containing checks. But there was one piece of literature that stuck out like a sore thumb.

Hank got it first. Turned back the flap. Pulled out the enclosure and lost all interest in the plumbing and heating business. Along about noon he shoved it across the desk to me, and even the ball game that afternoon was not sufficient to keep my nose out of that program, for that is what it was, the program for the national convention.

And to keep this from being a serial story, let me say that Me and Hank took in the whole show, had the time of our lives, and are planning on being among those present at the next one. 'Course the Queen of the Bungalow is also planning on being there, and Hank's friend says that they simply can't run the auxiliary without her, so it looks like the four of us will make the trip.

OLD TIMER ON CONVENTIONS

AFTER we got back on the job, the Old Timer drifted into the store as per usual, and after reading the morning paper, making various and sundry terse remarks about the weather, condition of business, playing of our baseball team, Tunney's chances in the next classic, Coolidge and politics in South Dakota, and the crop situation, he added that he had attended every session of the recent convention.

I guess it must be burned into a chap when he tries to unite two pieces of lead pipe the first time and gets a handful of solder that is too hot for either comfort or holding, because an old plumber is just like an old fire horse. When the fire horse hears the siren and the bells, he is not only ready to go, but he goes unless tied to the City Hall or some other substantial structure, and the old plumber is just the same.

He had been reading the newspaper accounts of the coming convention and was among those present at the opening ceremonies, both at the convention hall and the hotel headquarters, including the Viking Room.

And we pricked up our ears when the Old Timer began to compare the conventions of twenty and twenty-five years ago with the last thing in conventions. Take it from us, the Old Timer knows his onions. In his day he not only attended the conventions, but he participated in them and every one knew that he was there. And this is about his line:

"Heard Colonel Archer over at the Commercial Club. I been kind o' posing as a retired capitalist and not saying very much about having been in the plumbing and heating business, but after listening to the Colonel and getting the real low down on how much the plumber has done for humanity in the past, is doing at the present time, and is expected to do in the future, I am just naturally sold on the idea of getting out some new cards and instead of featuring 'Stocks and Bonds,' I am going to have them print 'Retired Master Plumber,' because the Colonel made me feel proud of the fact that I had once made my living as a plumber.

"And then I went over to the hotel on the evening before the big convention, met a lot of the fellows that were prominent even when I was—and that is a long time ago—but they are still in the game and still interested and enthusiastic in the progress of the industry. Some of the former leaders are now manufacturers, and it sure did me

good to meet them, talk over old times, and promise by all that was good and holy that it wouldn't be so long between drinks again.

"The convention opened with a bang, but it was different from the conventions of old. In those days we used to debate on every possible point. Orators among plumbers were numerous. Perhaps that is why so many of them have taken up politics so successfully. We had a program. We knew what we wanted. We not only asked for it, but we demanded it.

"A few of the good fellows among the manufacturers used to have small displays of their wares and sometimes we looked them over, but mostly we talked plumbing and the future of the plumbing industry.

THE OLDER ORDER

"OUR conventions were for master plumbers only. Why, I remember a young chap who had just gotten into the plumbing business for himself. He was located in a city having an association and he was a member of that association, but at the time of which I speak his association did not belong to the national.

"This chap was bugs about association work and, at his own expense, went to an important convention just to see the wheels go round, to get some dope on what they were doing, why they were doing it, and how they were doing it. To break the ice, he had letters of introduction to the officers from several of the leaders in his local association, men who had attended many conventions in the past and who were known to the officers.

"So this chap presented his letters, all in good faith and with the best intentions in the world, namely, to get some association religion and then to go back home and convert the rest of the gang into real honest-to-goodness state and national association members instead of continuing to run a one-horse local.

"The president and secretary read his letters of introduction, retired for a moment to discuss the momentous question, and then very kindly told him that the convention was for members only and they would have to deny him the privilege of attending either the business or the social sessions.

"And now any one can attend conventions. There is not even a doortender or sergeant-at-arms. In fact, I think that I could have gotten the floor and talked on several questions without even having my right to talk questioned, and it is twenty years since I was eligible for membership.

"And the exhibits. Why, fellows, they were simply wonderful. The public milled through by the thousands and there is no question but what some of the public will be buyers of new and modern fixtures just as a result of their visit to the exhibit, but back in my days we didn't want the public to attend our conventions and view our exhibits.

"I was agreeably surprised while loafing around the exhibit hall to run into a former customer, a man for whom I had installed a bathroom while a journeyman and then while a master I replaced that bathroom with a newer and more modern one. He was looking at the latest fixtures when I spied him and we had a dandy little visit."

And a lot more—because Old Timer has all kinds of time on his hands.

FALSE ECONOMY

HE SAVED some money, this customer of ours; that is, he saved it along in August of last year. But—well, here is the story: He and his mother owned a four-family apartment building and all of the tenants moved out. New tenants were hard to get; in fact, it soon became apparent that the building would be without tenants throughout the winter, so the big boy decided that, with no income in sight, it was essential that he cut all of the corners. The first thing to do was to shut off the water and drain out the water in the plumbing and heating systems.

No sense in getting a plumber for a simple little chore like that. Why, any dub could turn off the water. Well, you know the story.

He shut off the water. He drained out one of the heating plants. Pretty slow work, because there was considerable sediment in the draw-off valve. He drained out

(Continued on Page 51)

Old Timer drifted into the store as usual

Sewage Disposal for the Home or Small Community

(Article No. 2)

A Mexican street. Note the open sewer in the middle of the street

By IVAN D. WOOD

College of Agriculture, University of Nebraska

IN THE previous article we discussed the history of sewage disposal and learned that there is "nothing new under the sun." The Assyrians drained their palaces 800 years before Christ. The Romans built the great sewer of Rome more than 2,500 years ago, and while more of a drain than a sewer, the product of their workmanship still remains in use, a tribute to the engineering skill of the Roman people.

Unsewered towns of the Middle Age suffered terrible losses from disease and even at the present time, rural districts and small villages where old cesspools and outdoor vaults are used suffer somewhat the same consequences, on a smaller scale.

In the first article of this series, we discussed the dangers of contamination of water supply by means of sewage from any source such as leaky drains, privy vaults or old cesspools. Attention was brought to the fact that the old cesspool is a source of danger to be reckoned with at any time and place; it is a container of the household wastes. It must either be emptied from time to time or allowed to leach its contents into the surrounding soil, contaminating it. We learned that sewage is dangerous because it often contains germs of disease such as typhoid and other bowel ailments. In this article we will take up something of the character of sewage and discuss some other methods of disposal.

COMPOSITION OF SEWAGE

SEWAGE is a complex substance. It is a mixture of water and solids and in appearance resembles dirty water with materials in suspension. It may easily be seen that the composition will vary greatly from day to day and even from one hour to the next. The wastes from the individual household will be much more variable in quantity and composition than those from a village or city. In general the liquid wastes carry with them fecal matter, bits of paper, grease, soap, decayed vegetable matter from the kitchen sink, besides the drainage from the laundry. In addition to these materials which may be easily identified actually floating in the liquid, there are many other substances in solution or in suspension (small particles carried in the fluid), some of the particles being so fine that they will not settle out even though the liquid be allowed to stand for long periods. The amount of solid matter is a variable quantity. Generally speaking, it will not run higher than 2 parts of solid matter per 1,000 parts of water and often it will be much less. Of this solid material probably 40 per cent is in suspension and 60 per cent is in solution just as sugar or salt is dissolved in water.

When first discharged from the house, sewage has only a slight musty odor and is comparatively inoffensive. If passed through a strainer and allowed to stand for a time,

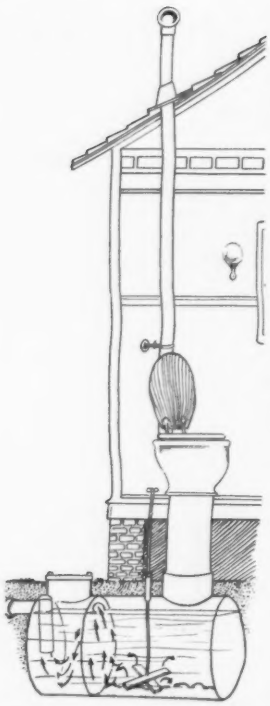


Fig. 1.—A waterless closet showing chemical tank

offensive odors are given off caused by the putrefaction of the animal and vegetable matter which it contains. After a longer period of time the once turbid, foul smelling liquid becomes clear and odorless, a part of the solid matter having been settled out and reduced to a state similar to the humus of the soil. This change is just what always takes place when any animal or vegetable matter decomposes in the presence of air. "The bringing about of this decomposition rapidly and inoffensively is the ultimate object of all methods of sewage disposal," says one authority on the subject and I think we will all agree with him.

Besides the animal and vegetable matter in the wastes from the household there are literally millions of living organisms known as bacteria. It has been shown that ordinary sewage may contain as many as 1,000,000 of these organisms in 15 drops. There are, of course, hundreds of varieties but for our purpose we may divide them into two general classes, the disease producing or pathogenic and the non-pathogenic, such as normal intestinal bacteria and others from miscellaneous sources. Those which produce disease we have discussed. The non-pathogenic organisms or harmless bacteria are very important. Certain types are helpful, as they cause putrefaction of sewage materials and are made use of in the septic and Imhoff tanks which will be described later.

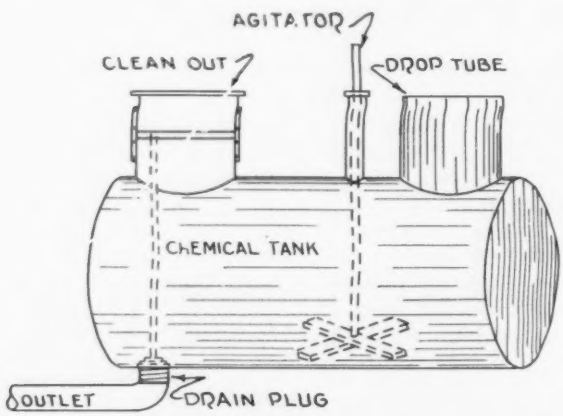


Fig. 2.—A chemical tank for use with chemical toilet. This type is provided with a drain tube at bottom. The drain plug is pulled by a rod reaching up to clean-out hole

AMOUNT OF SEWAGE PRODUCED

THE TOTAL amount of sewage produced in gallons per person is also a variable quantity. For the individual dwelling, the total amount of sewage will be about the same as the total amount of water used in the residence. The moment water is piped into the residence the need for sewage disposal becomes apparent and is demanded by the average home owner.

Let us consider what happens in the average farm home without water even piped to the kitchen. The entire household supply of about 8 gallons per person per day,

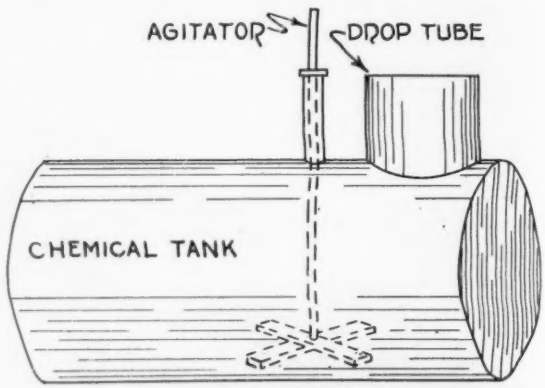


Fig. 3.—For certain conditions the chemical toilet is made without lower openings and the contents are pumped out from time to time

is carried into the house and in many cases carried out again in the form of slops and wastes from the kitchen.

Sixty Tons of Water Per Year

Eight gallons per person per day, is 40 gallons or 333 pounds per day in a family of five. This means carrying more than 60 tons of water per year, in and out of the house. Often to make matters worse, the well is a long distance from the back door. The piping of water into the house, even just to the kitchen sink, almost doubles the amount used per person per day. On the average the family will now use 15 gallons per person per day, and the need for a drain is immediately apparent.

When the house is later fully equipped with bath and laundry, the consumption of water jumps to 30 or 35 gallons per person, for each 24 hour period and a satisfactory means of sewage disposal is in order.

It is sometimes possible to obtain accurate data as to the total flow of sewage per 24 hours by observing the total amount of water used in a like period. Where such information is not at hand an estimate must be made and for that purpose the following table has been prepared:

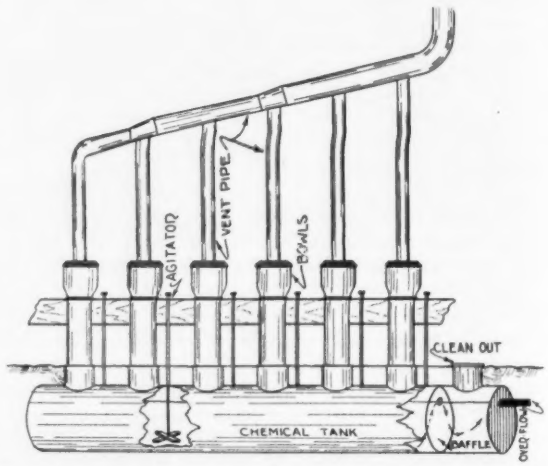


Fig. 4.—A multiple bowl installation of self-draining type

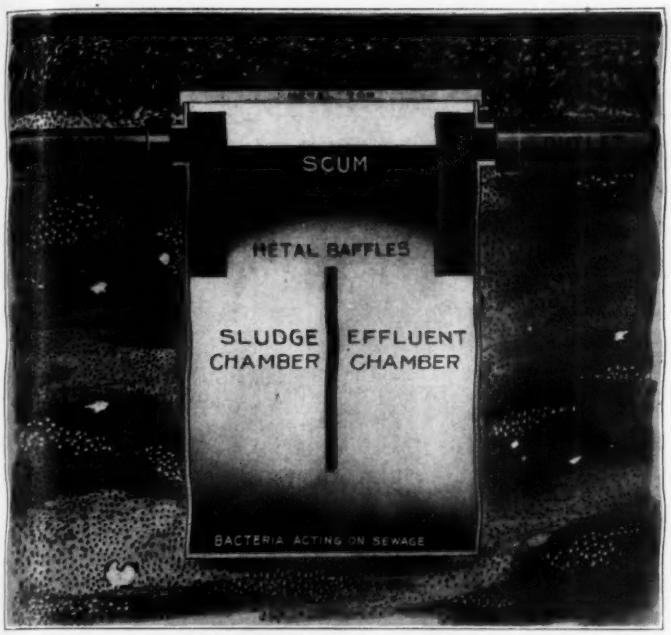


Fig. 5.—A simple, single-chamber septic tank showing the scum on the surface and the sludge at the bottom. Note how inlet and outlet are arranged so that scum is not disturbed

	Flow per person per 24 hour period	
Residences	30 to 35 gallons.	
Day Schools	18 to 25 gallons.	Note
Boarding Schools	30 gallons.	Computed full
Hospitals, asylums, etc.	40 to 50 gallons.	capacity of all rooms.
Hotels	25 to 35 gallons.	
Hotels	40 to 50 gallons.	
Country Clubs*	10 to 15 gallons.	Every room
Resorts*	10 to 15 gallons.	with bath.

*Compute 30 gallons per person per 24 hours for those who stay all night, and make all computations for average large crowd.

The sanitary sewage flow from cities or groups of houses varies greatly in quantity per person. It may run as low as 20 gallons per 24 hours and as high as 100 gallons, depending on local conditions. There is also an hourly and monthly variation. Accurate figures should therefore be obtained for each individual case if possible.

The quantity of actual human waste produced in the average household in the absence of water supply is a problem to be reckoned with in many instances. Of the more than 6,000,000 farms in the United States, less than 12 per cent have water piped into the house and therefore cannot expect to use the flush toilet.

THE CHEMICAL TOILET

THE CHEMICAL toilet, when properly used, certainly has many advantages over the outside privy. For one thing it may be safely located within the dwelling, a feature greatly appreciated in winter weather. It is not infested with flies which may carry germs of disease to the food supply, and when given proper attention, the chemicals used actually render the sewage much less harmful than some other systems commonly in use.

In general, the chemical toilet or closet consists of a stool device resembling that of an ordinary flush closet connected, by means of a drop tube, to a tight receptacle partially filled with chemicals where the excreta are digested.

The chemical tank is ventilated by a tube connected to the outer air. This feature is particularly important if the closet is installed in the living quarters. It is necessary from time to time to empty the chemical tank and the contents should be placed in the open fields where there is no possibility of contaminating the water or food supply.

Some of the later types, now on the market are equipped with a self-draining feature. At one end of the chemical tank, is attached a drainage tile through which the effluent passes into a line of drain tile or a small cesspool near the ground surface.

Fig. 1 shows one type of waterless closet installed in the bathroom of a home. It is provided with a vitreous china bowl and an oak-finished, non-split seat. The bowl is connected to the tank with a drop-tube of ample size while ventilation is provided by a flue leading from the drop-tube out through the roof to the open air.

(Continued on Page 77)

Fig. 6.—A sub-surface irrigation system for disposal of effluent from a septic tank. Tank in lower right hand corner. Joints covered with heavy tar paper to prevent dirt from working in. In close soils the tiles are surrounded by gravel

The Round Table takes up a new

HEATING PROBLEM

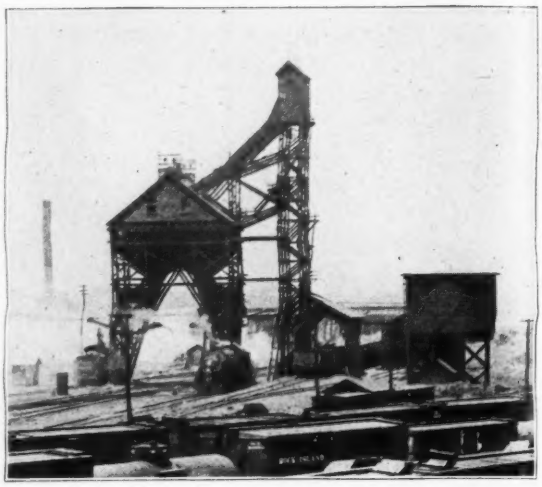
Each member of the Round Table is asked to send in a solution of the problem shown here. Send the solution to "Domestic Engineering" and it will be analyzed by the Round Table Chairman and discussed by him in a Round Table article a few weeks later

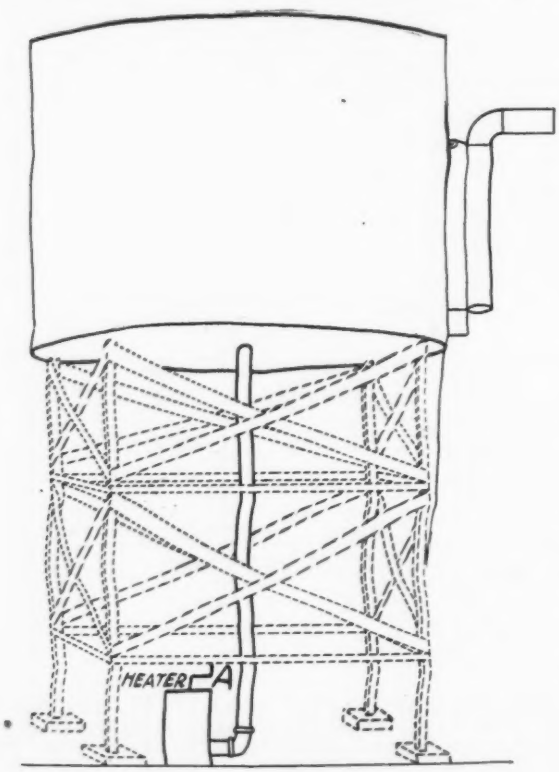
A PROBLEM is here presented for our consideration and advice, that is sure to arouse interest. It is hoped that it will bring a solution from each reader and possibly develop for discussion many more problems of equal fascination. Send in your solution today.

This is a problem which is of particular interest to our friends in the heating business, because of the opportunity for increased business that exists in each community, where, in addition to railroad tanks, there are the large factory sprinkler tanks and similar installations requiring heat, if they are to be kept from freezing. It must of course be remembered that where the tank is located unusually high, the pressure on the tank heater must be considered and it may be deemed advisable to install a small steam boiler and circulate the steam through coils installed in the tank.

Along the right of way of a certain railroad are located tanks of large capacity used for refilling the tanks on locomotives as may be required. Some of these tanks are in especially exposed locations and in sections of the country where very cold weather may be experienced. Sometimes it may happen that no water is drawn for some considerable period of time, during which the water keeps cooling and in fact freezes.

This freezing of the water may cause great inconvenience and delay due to inability to furnish water that may be urgently needed and again may cause rupture of the tank, putting it permanently out of commission.





To overcome such possibilities it was deemed desirable to install in a small house under the tank a water-heating boiler through which the tank water could continuously circulate, taking up in its travel sufficient heat to prevent the water in the tank from freezing.

Our problem then will be as follows: A wooden tank, twenty feet in diameter, fifteen feet high, containing 30,000 gallons of water, is located in a section of the country where temperatures 20 degs. below zero are common.

It is desired that boiler be operated at all times when the weather may be 45 degrees Fahrenheit or lower—in other words, the water in the tank is to be maintained to at least 45 degrees as a minimum.

What capacity of water heater may be used expressing the capacity in terms of tank heating work, or gallons per hour, and how shall the piping to the tank be run in order that satisfactory results may be experienced. A drawing of a tank and heater is given, which it is suggested be used in sketching the proposed piping.

To facilitate matters it is suggested that the tank be considered as a cylinder 30 feet in diameter, 15 feet high, and that the loss of heat from the tank be taken as one-half a British thermal unit per sq. ft. of exposed surface per hour for each degree difference between water in tank and outside air. Also consider that most tank heater ratings are assumed to raise a certain number of gallons of water twenty-five degrees in temperature per hour.

When considering this problem it will not be necessary to take into account reserve capacities for the heater, as these allowances usually depend on local practices, and we are primarily interested in determining basic method of figuring and how piping should be installed for best service.

The way to get the most out of this problem is to send in a solution. The solutions will be published and analyzed in a future issue of "Domestic Engineering."

EXCEL

because

Nothing Else Will Do!

That's what the user of EXCEL Unions will tell you.

And this is no mere opinion—it is what ***actual service has proven.***

EXCELS save time at installation because they go into place in an instant. Never any jammed starting threads, never any "flukes."

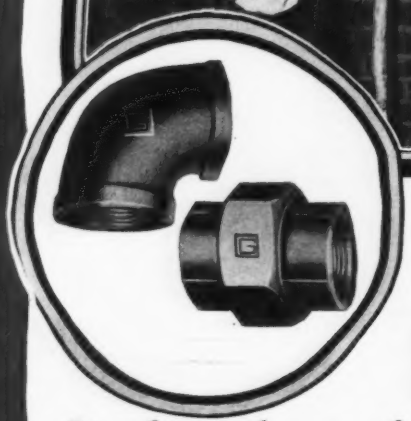
EXCELS forestall all arguments by doing their work ***perfectly*** for the life of the job.

EXCEL Unions meet U. S. Government Specifications as approved by the Bureau of Standards, also listed as Standard by Underwriters' Laboratories.

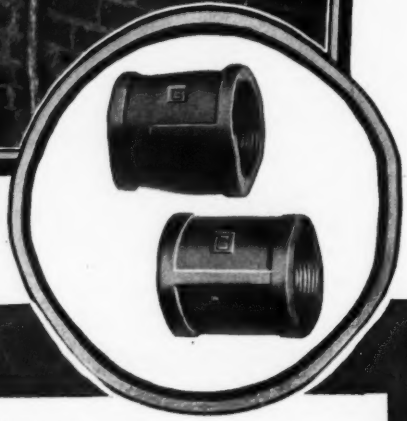
FROM YOUR JOBBER

PROVIDENCE FITTINGS COMPANY

7 Water Street, Boston, Mass. New York Office: 210 E. 45th St.



A few of the typical Square "Gee" fittin's used on the above installation.



It takes a heap of jobs to make— but only one to break YOUR REPUTATION

IT'S the little things that often count. For example, Square "Gee" fittin's —they're aiding plumbers the country over to maintain their reputation for good plumbing. Square "Gee's" have the stuff that inspires the plumber's confidence—that makes permanently tight, complaint-proof connections.

Special tapping machines, careful finishing processes, smooth countersinking and rigid inspection insure clean-cut threads that start quick and hold tight. Guarantees their hidden performance ability to safeguard the job from future trouble.

When your jobber's salesman calls tell him to write Square "Gee's" on that fittin' order. It's a safe way to keep your name connected with good plumbing.

THE GRABLER MANUFACTURING COMPANY · Cleveland, Ohio
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SQUARE
Malleable Iron

"GEE"
PipeFITTINGS

A group of delegates and guests attending the convention

Florida Welcomes Plumbing Inspectors

"THE PRESERVATION of public health is ever paramount, and the distinct relation of plumbing to public health is universally conceded; the American Society of Sanitary Engineering, in convention assembled, affirms its belief that in states or cities wherein a distinct plumbing inspection bureau be not maintained, that the plumbing inspection department can best accomplish the purposes for which it was instituted by and through the channels of the board of health."

In its approval of the above, the American Society of Sanitary Engineering went on record with reference to a question of importance in the plumbing field.

This was at the twenty-second annual convention of this society, held August 9, 10, 11 and 12, at the Carling Hotel, Jacksonville, Fla. The 1928 convention is to be held in Milwaukee, Wis., on dates to be announced later.

At the opening session, John Fowler, building inspector of Jacksonville, who brought the convention to his home city, and chairman of the convention committee, introduced Rev. J. T. Boone, pastor of the First Christian Church, Jacksonville, who pronounced the invocation. This was followed by addresses of welcome by Mayor John T. Aslop, Jr., and Dr. M. B. Herlong, commissioner of health and sanitation for Jacksonville. Thomas J. Claffy of Chicago, as president of the society, cordially responded to Jacksonville's welcome.

Delegates from practically every section of the United States were in attendance. A roll call made by Edward L. Groeniger, secretary of the society, showed that more than one hundred delegates were in attendance at the opening session.

PLUMBING AND PUBLIC HEALTH

AMONG the outstanding features of the convention was the paper presented by Dr. M. B. Herlong, commissioner of health and sanitation, Jacksonville, who emphasized the value of ideas gained at the meetings of the society, citing the application of this information to the treatment of typhoid in Florida in years past. He also made a comparison of the use of plumbing in this and in European countries.

In his paper on the subject of "Relation of modern plumbing to public health in the tropics," he discussed the dangers from inadequate methods of sewage disposal and the nature, development, effects of and the combating of hookworm. This was followed by the showing of several reels of motion pictures illustrating the subject of hookworm and of typhoid fever. "Hookworm," he said, "is a common malady in the south, particularly among children. Eradication of the hookworm is one of the gravest problems confronting the scientific world and is a many-sided one.

"Prior to 1910 we had, during one year, 365 cases of typhoid with 61 deaths," Dr. Herlong said. "John Fowler, who brought you to Florida for your meeting this year, attended one of your meetings and came back with ideas which he put into operation. These ideas, in due course of time, lowered the typhoid rate each year until now we have practically no typhoid at all.

Dr. B. L. Arms, Florida state health officer, gave an interesting talk upon the relation of the development of sewage disposal to eradication of certain diseases. He complimented the sanitary engineers for the part they are playing in protecting public health. He did not submit a paper, but spoke extemporaneously. His address was one of the most interesting of the convention.

He praised Florida for being the first state in the Union to adopt the Hoover plumbing code. This code was originally sponsored by the A. S. S. E., he said. Its adoption has saved the state millions of dollars, it was declared, and has resulted in better sanitation. John Fowler, city building inspector for Jacksonville, and John Bronzonie, holding a similar position for Tampa, were given the credit for the adoption of the Florida code.

COMBAT WATER BORNE DISEASES

TWO papers were presented by Wm. C. Groeniger, sanitary engineer of Columbus, Ohio, and C. J. Henderson, of Seattle, Wash., entitled "Insurance against water borne diseases from plumbing fixtures," and on "Administration of plumbing laws and regulations." In these papers plumbing fixtures as a source of water supply pollution was discussed.

Mr. Groeniger discussed insurance against water borne diseases through plumbing fixtures and Mr. Henderson talked on fixtures as a source of pollution. Both arrived at identical conclusions, declaring that there are plumbing installations being set up that are mechanically correct, yet unsatisfactory because the basic principles of prevention of disease have been overlooked or violated.

"The point where a safe water supply ends and sewage begins is sometimes very finely drawn," said Mr. Groeniger. "Positive prevention of contamination or pollution of water is a matter of providing air space or an air-break, which makes a cross connection impossible. In low down water closet tank combinations it means an air-break;

in high tank combinations it means a raised ball valve."

Both stressed the danger of cross connections between a safe water supply and a sewerage or drainage system. Serious outbreaks of typhoid and other diseases have resulted from water contamination through faulty plumbing and cross connections, the speakers declared.

DRINKING WATER TEMPERATURE

DRINKING water temperature was discussed by Thomas M. Dugan, of McKeesport, Pa., and A. E. Smith, Columbus, Ohio. Both declared that water too cold or too warm for satisfactory drinking purposes concerns the health of everyone. Large industrial organizations, they said, wishing to obtain the maximum service from employes, are learning that drinking water, with proper temperature, increases the amount of work these employes can do.

Experiments have proved that drinking water in factories and office buildings chilled to too low temperatures is harmful to workers, sometimes causing heart failures if the person drinking it is very warm, and the compilation of desirable temperatures in various parts of the United States was considered.

Corrosion of soil, waste and vent pipes, by A. S. Shaver, sanitary engineer, Birmingham, Ala.; kitchen wastes, by W. M. Smith, of Dayton, Ohio; the qualifications of plumbing inspectors and sanitary engineers and their duties, by J. J. Crotty, of New York; standardization of definitions of plumbing terms, by R. M. Starbuck, Jr., Hartford, Conn.; the extermination of water hyacinths, by John B. Callahan, of Jacksonville, illustrated by living specimens and motion pictures, were the other features of interest. The Florida water hyacinth came in for general discussion and was branded as disease carrying vegetation by several speakers. It thrives on sewage in streams, they said, and spreads malaria.

Development of the state plumbing code of Florida, by John A. Bronzonie, and the matter of flood control in the Mississippi Valley were discussed, and the resolution committee prepared a resolution which it is proposed the society will submit to Herbert Hoover, secretary of commerce. The paper by A. W. Barnes, of London, England, on water closet connections, was submitted and referred to the publication committee. Mr. Barnes, who came from England to attend the 1926 convention at Washington, presented the British practice in making water closet connections.

These papers, the discussions of them, reports of the research and other committees, entertainments of various kinds and the hearty welcome of the people of Jacksonville will cause the twenty-second annual meeting of this society long to be remembered as another step forward in the science of sanitation and another step towards the sanitary safety of the American people.

ACTIVITIES OF THE SOCIETY

THE REPORTS and actions of the society were also of importance, particularly to those directly interested in sanitation. The society understands that its effectiveness is in proportion to the information it gives to the public, so J. J. Crotty urged that the press committee make a special effort to have the meetings given proper prominence in order that the people of Florida might understand the purposes of the society, and have some knowledge of the benefits they are now enjoying, due in some measure to the activities of the society during its twenty-two years of existence. A press committee was appointed, consisting of J. J. Crotty, New York, L. A. Cornelius, Grand Rapids, Mich., and T. N. Thompson, New York.

James R. Walker, who has served as secretary and librarian of the society for many years, presented a report showing the number of year books of the society in his custody. These books contain a vast amount of information, but this information is made useful only as it finds wide distribution, so a motion was carried requiring that the librarian make an effort to complete his set of records of the society and that copies of the annual proceedings beginning with the year 1915, and up to the present time, be given to public libraries and trade or industrial schools upon their request.

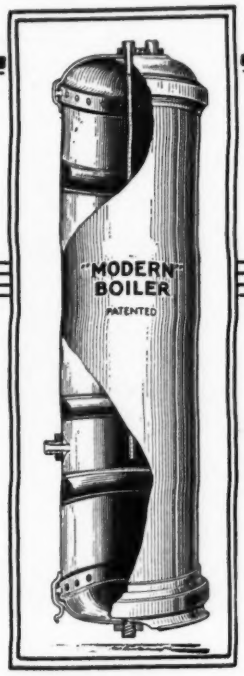
Another group of delegates and guests at the convention

A. R. McGonegal of Washington, D. C., suggested that the society appoint a committee to approve or disapprove the plumbing fixtures that are offered to the public, for reasons that seem good and sufficient, on the order of the insurance underwriters; in other words, to have a committee on standards, to whom such fixtures would be submitted for approval or disapproval, and who would say whether they were suitable for the plumbing codes over the country. Upon the suggestion of the president, Mr. Henderson moved that Mr. McGonegal prepare a resolution covering this suggestion, and submit the same to the resolutions committee, and it was so ordered.

J. J. Crotty spoke in favor of a distinct bureau of plumbing inspection, and asked the indulgence of the chair and the society to have presented at the convention, representatives of the society in Florida, to discuss the Florida law.

A special report was rendered by W. C. Groeniger who, under appointment by President Claffy, has acted for the society as a member of the American Engineering Standards Committee. This matter was further reviewed by the president, and favorable discussion developed, emphasizing the importance of the recognition of the society in the formation and work of the Standards Committee, which comprises nine national engineering societies, seven departments of government and nineteen national associations, representing most of the industry of the country. Mr. Groeniger moved that this society accept the sponsorship offered the society, and the responsibilities that go

"MODERN" COPPER BOILERS



Section showing connection of lower head to shell of the "Modern" Pat. Boiler.

Study this Construction

"Modern" Copper Boilers are made of the finest of Lake Copper which after going through our refining process takes on a much greater density making it almost as hard as steel. " " " " " " "

The heads, as shown in the sectional views, are pressed on by a hydraulic method and are then riveted with copper rivets. Over all a band is spun covering the rivets and re-inforcing the joint. " " " " " "

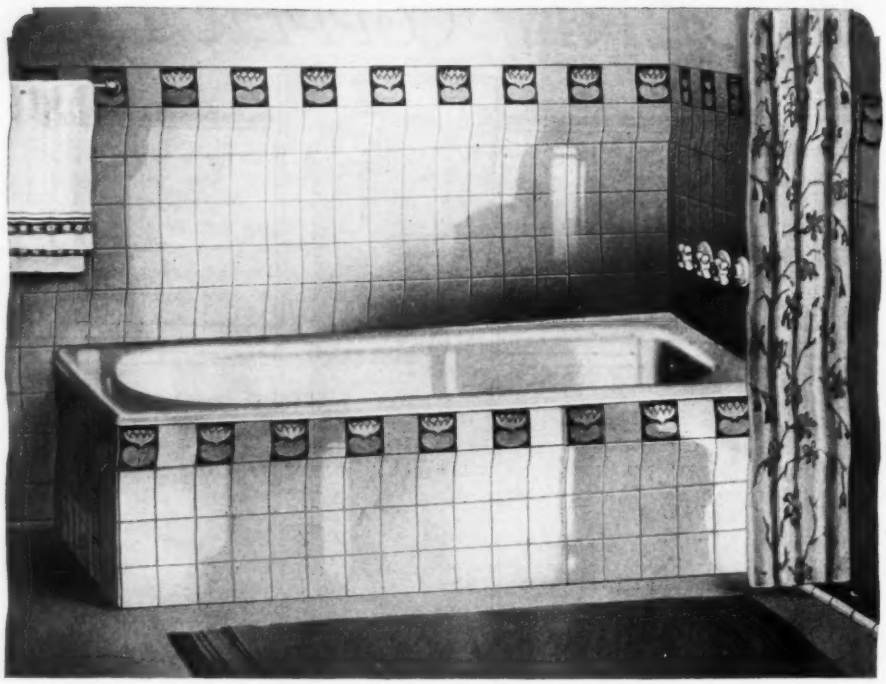
"Modern" Boilers are hydraulically tested to the pressure stamped on the boiler, which is either 200, 250 or 300 lbs. They cannot collapse due to the corrugated ribs inside them and will give lasting satisfaction wherever they are used. " " "

Write for our complete interesting catalog.

Section showing connection of upper head to shell of the "Modern" Pat. Boiler

Hayes Manufacturing Company ~ Makers

PATERSON ~~ NEW JERSEY



The New "Standard" Brighton — 36 inches wide and adaptable to any bath tile-scheme

Cross section of the 36 inch wide Brighton. Shown with Special K 300 top nozzle fitting. Can be supplied with any type of fitting shown with the 30 inch wide Adapto in the "Standard" Catalogue, or with the new "Standard" octagonal design Chromard Finish fittings made to harmonize with the fittings of the New Era Lavatories.

The 36 inch wide "Standard" Brighton meets every requirement for harmony with any of the artistic decorative tiled bathroom installations now the vogue. Its six inches of additional width makes it a Bath of correct proportion for a large, fine room.

It takes tile or marble front and sides. It can be built-in either at right or left hand corners, in a recess, against the wall with only one concealed side, or out on the floor away from the wall entirely.

The 36 inch wide Brighton is made only in one length, 5½ feet and has a 4½ inch wide rim. It has a flat bottom, 24¼ inches wide, which allows ample room for bathing in comfort.

It is furnished with Acid-Resisting or regular enamel, and has fittings with either Chromard Finish or nickel-plate.

Every Bath has the trade mark "Standard" impressed in the enamel when made with regular enamel, and the mark "Standard" A-R when finished with "Standard" Acid-Resisting Enamel.

Standard Sanitary Mfg. Co.
PITTSBURGH

Ask your Wholesaler about this new "Standard" Bath, and the many other "Standard" improvements in Plumbing Fixtures.

"Standard"
PLUMBING FIXTURES

MEMBERS THE NATIONAL TRADE ENGINEERING PLUMBING AND HEATING INDUSTRY

with such sponsorship, and that the matter be referred to the president to appoint such a committee or members to serve, to promote this work. A motion to this effect was carried.

MEET ME IN MILWAUKEE IN 1928

"MEET ME in Milwaukee in 1928," were the parting words, for Milwaukee was chosen as the place of meeting for next year's convention.

The Wisconsin city won out easily over other bidders, chiefly for the reason, delegates said, that it withdrew a year ago in favor of Jacksonville for the 1927 gathering. There were a number of invitations for the 1928 meeting.

James R. Walker, of Waterbury, Conn., is the new president of the society. He succeeds Thomas J. Claffy, of Chicago. Other officers elected are: A. C. Shaver, Pasadena, Calif., first vice president; Stephen Gilmore, St. Louis, second vice president; Otto Meinert, Davenport, Iowa, third vice president; George Stolz, Milwaukee, fourth vice president, and J. F. Doud, Cincinnati, treasurer. Mr. Doud was re-elected.

The position of secretary is appointive and will be named shortly by officers and directors. The post is now held by Edward L. Groeniger, of Columbus, Ohio, who says he will not accept reappointment.

Thomas J. Lee, Pittsburgh, was re-elected to the board of directors to serve with L. A. Cornelius, Grand Rapids, Mich., A. J. McGookin, Newark, N. J., and Joseph J. Crotty of Boston. The society elects only one member of its board of directors each year.

The following committees were appointed by the president:

Auditing committee: James R. Walker, chairman; J. L. Devine, Geo. R. Stolz.

Convention city committee: Geo. J. Dehn, chairman; Geo. R. Stolz, John Bronzonie, Otto Meinert, T. A. Wolfe.

Resolutions committee: Aden E. Smith, chairman; A. R. McGonegal, C. A. Rainger.

Nominating committee: T. M. Dugan, chairman; T. A. Wolfe, W. N. Mullen, F. H. Fitzgeorge, T. G. English.

THE SOCIETY LIKED JACKSONVILLE AND JACKSONVILLE LIKED THE SOCIETY

SOME of the most aggressive members of the A. S. S. E. live in Florida, so they took full advantage of this opportunity to meet with the national body. Among these was C. O. Langston of Jacksonville. Mr. Langston is state deputy plumbing inspector for all territory within a radius of five miles of Jacksonville.

Other officers of the Florida Society of Plumbing Inspectors are: John A. Bronzonie, Tampa, president; B. Catchings, Tampa, secretary-treasurer; H. L. Schaller, Miami, first vice president; O. A. McIntosh, St. Petersburg, second vice president; W. C. Cooper, Winter Park, third vice president, and W. G. Waters, West Palm Beach, fourth vice president. All of these officers were recently re-elected to the same offices they held in 1926.

Delegates to the convention of the American Society of Sanitary Engineering stated that they were greatly impressed with Jacksonville and Florida.

"Jacksonville surprised us," said Thos. J. Claffy, president of the society. "It is such a thriving city and seems to be up and coming. We like the hospitality that is being shown us, and our meeting was a success in every sense of the word."

A Jacksonville paper said of the A. S. S. E.: "This society has done much to make conditions more healthful, and Jacksonville and other cities have given attention to the recommendations of the sanitary engineer and have benefited from his studies and labors. If cities generally would follow the principles of sanitary engineering and make practical application of them, the health of many people would be improved. It is a field of city building that all municipalities must consider in order to overcome conditions that breed disease. Epidemics have spread and have caused suffering that might have been averted by giving attention to elemental principles of sanitation. Great progress has been made, but much more remains to be accomplished in this field of civic development. The city that is healthful has one of the most valuable assets any place can possess."

Another group of delegates and guests at the convention

ENTERTAINMENT

THE PEOPLE of Jacksonville also distinguished themselves as entertainers. Among the entertainments provided for the members of the society were: A trip to Jacksonville beach, cars conveying members to the beach, a beach party tendered by the Master and Journeyman Plumbers' Association, a beach dinner and dancing with a sightseeing trip to St. Augustine for women, annual banquet of the organization and a program of entertainment arranged by the city convention committee, of which John Fowler, city building inspector, is chairman.

Applications for membership were received from the following and approved:

August Gaspard, New Orleans, La.; Wm. Peterson, Youngstown, O.; C. C. Walker, Charlotte, N. C.; Maurice Colbert, Washington, D. C.; Robert Boyd, Washington, D. C.; Edwin Cade, Brooklyn, N. Y.; Chas. Enos, St. Joseph, Mo.; Joseph Heffron, Washington, D. C.; J. H. Tomkinson, Boynton, Fla. All the applications were for active membership.

The report of the resolutions committee was submitted by A. E. Smith, the following resolutions being adopted:

Resolution of condolence to the family of John F. Driscoll, Pittsburgh, recently deceased.

Opportunities for Selling KENNEY Thermo Valves.

"SNAP ACTION"

No. 4 of a Series

Restaurants need abundant hot water!

No need to enumerate the advantages of having hot water in restaurants! Look about you, note the many lunch-rooms and eating places in your own neighborhood. Then think of the necessity for KENNEY Thermo Valves ("Snap Action").

Attach to the boiler, make it an instant hot water storage heater and leave your customer satisfied! That's money in your pocket. And it is easy and quick to do!

KENNEY
THERMO VALVE
"SNAP ACTION"

has no complicated mechanism, is built to give permanent satisfaction without future annoyance or trouble. Supplies instant hot water—and plenty of it—without waiting or fuss! Always and safely automatic in action—quickly and easily installed—real money for you! Plumbers, jobbers or manufacturers—write for Kenney details!

There's real money in Kenney installations—it'll pay you to investigate.

FLANNERY MFG. CO.

FLANNERY BLDG. PITTSBURGH, PA.

Resolution of condolence to the widow of John T. Cripps, Eagle-Picher Lead Co., Cincinnati, O., deceased.

Resolution of condolence to the family of Wm. J. Tracy, deceased.

Resolution of thanks to the local and trade press.

Resolution of protest against non-compliance with the plumbing code, or the principles set forth in the report of the sub-committee on plumbing of the building code committee, Department of Commerce, in the projected general building plan for the U. S. Government.

Resolution of thanks to all who have had a part in the reception of the society to Jacksonville.

Resolution: "We, the American Society of Sanitary Engineering, in convention assembled, recognizing the splendid principles of plumbing regulation as set forth in the Florida state plumbing code, as a health measure, do hereby pledge our support and co-operation toward the maintenance of such principles."

Resolution of condolence to Herbert Schaller upon the death of Mr. Schaller's mother.

Health Aspects of Drinking Water*

By T. M. Dugan, associated with A. E. Smith

TOO much stress cannot be put on the necessity of frequent bacteriological examinations of water that is to be used for human consumption.

But drinking water, to be palatable, should also have a suitable temperature, and what this temperature might be has long been the source of deep study, research and painstaking investigation on the part of doctors, engineers and other scientists.

Assuming that the water is pure and wholesome, a review of some of the methods to make it palatable should prove profitable.

Thirst is distinctly felt when the body has lost about 16 oz. of water. The human body, when in a healthy state, actually throws off more water than is consumed because water is formed in the body by decomposition and chemical action of food.

Violent exercise, hunger or hard work help to cause thirst, and nature responds in a measure by replacing some of the water by the oxidation of hydrogen, proteids and fats into more water.

One investigator says that, in the case of a hungry man, 32 grams of hydrogen in the form of organic matter were oxidized to 288 grams of water.

TWO KINDS OF THIRST

THIRST of habit should be distinguished from true or physiological thirst—the expression of a real demand of the tissue of the body. It should also be noted that the sensation of thirst, like hunger, does not vanish as soon as the need or desire of the drink is supplied, but lingers for some time afterward.

It is quite true that a man's skin or outside parts of the body can take up several ounces of water from a half hour in a warm bath, but it is soon passed off again as the skin returns to normal.

Anyone who continues to drink water to excess, so long as the process affords gratification, runs the risk of becoming water logged. Such unrestrained drinking produces profuse perspiration, gastric disturbance, marked debility and makes one subject to sunstroke and heat exhaustion.

Profuse sweating may seriously interfere with the secretion of the gastric juice, and there is every reason to believe that a deficiency in the water supply to the blood similarly interferes with the secretion of digestive juices, and, by so doing, impairs further intestinal digestion.

Among the many so-called modern methods used to supply man's needs we find the old "tin cup and pail," the water pitcher, the table glass, receptacles with "ice in the water" at the head of the list. These waters frequently cause cramps and other bodily disturbances (not to say a word about the other insanitary features) on account of their low temperatures and too free use.

To cool water to a suitable and palatable temperature then became a problem for the engineer, and from his efforts covering a number of years, several practical and economical methods for providing a constant supply of safe and satisfactorily cooled water have been devised.

VARIOUS TYPES OF WATER COOLERS

AMONG the foremost of these we note the unit cooler and the central cooling plant with distributing pipes, each supplying a palatable, pleasing water to any multiple number of manually operated sanitary fixtures, the water and machinery being automatically and thermostatically regulated and controlled.

Central water cooling devices are usually of two types—i. e., circulating and non-circulating, the circulating type being generally considered for large installations, while the latter are popular for work where only a few fixtures are to be taken care of.

The former (the unit type) is spoken of, in general, as of two classes also. First we have the container with ice placed in or around it, the water being furnished either from a gravity supplied semi-open vessel or in coils attached to the water supply of the building. Then we have the closed pressure type unit fixture supplying mechanical thermostatically cooled water from a sanitary fixture operated either by hand or foot.

The rapid advances made in recent years in the knowledge of refrigerants and the automatic control of the temperatures of them has made the use of easily cooled water a necessity rather than a luxury.

Managers of industry and those that have to do with employing a large number of employes realize the great advantage to be derived from this kind of welfare service. Hundreds of thousands of dollars are being spent annually by large corporations and other industry for this class of work.

Large industrial organizations, through reports of their safety and welfare departments, have learned that the physical condition of the worker is a serious matter. Particularly is this important in work where there is great physical exhaustion. Industrial workers in high temperatures, such as found around steel mills, will often drink twice as much water as the ordinary worker. The effects of this are known to be bad, often producing cramps and diarrhea, frequently resulting in loss of time and lessening the productive power of the worker. On the other hand, if water is available of a temperature that is pleas-

(Continued on Page 73)

*Excerpts from a paper presented at the 1927 annual meeting of the American Society of Sanitary Engineering.

Automatic

Tamper-proof

Designed for residential and industrial use, with capacities in Steam from *400 to 12,000 square feet,* and in Water from 650 to 19,500 square feet of radiation.

More Service for the Customer *Less* Service From You

Gas-Era Gas-Fired Boilers make the customer happy because he gets noiseless, automatic heating service that is the same every day. He is relieved of all personal responsibility—positive automatic controls and tamper-proof construction take care of that. He is supplied with the most perfectly controlled, most luxurious heat he has ever enjoyed!

Gas-Era Gas-Fired Boilers make the dealer happy because he doesn't have to fuss and worry about the job after it has once been put in.

Gas-Era Gas-Fired Boilers

Manufacturers and Western Distributors
L. J. MUELLER FURNACE CO.
167 - REED STREET ~ MILWAUKEE, WISCONSIN

Eastern Distributors
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260 - FIFTH AVENUE ~ NEW YORK CITY

Advertising Editorial

A NEW ONE EVERY WEEK—No. 282

Trying to Sell?

PEOPLE who are looking at any type of residential building, you will note, make it a point to give the plumbing and heating equipment a critical examination. A residence that is to be rented—whether it be a single-family dwelling or one of a dozen apartments, must be up-to-date in its plumbing and heating equipment. The sale value of a property must be kept up—even though there is no immediate intention to sell. We'll remodel your plumbing and heating. Time payments if desired. It will add rental and sale value to the building.

(In this space your Name,
Telephone, and
Address)

A BATH A DAY KEEPS YOU FIT EVERY WAY

Ask for a free copy of "The Story of the Bath." Instructive and interesting. Every member of the family will read it with pleasure.

Get Into the Public Eye

WHATEVER we may think of the various "stunts" which press-agents work out—we'll have to admit one thing: They serve to get someone's name in the public eye. Sound advertising does the same thing, with this difference. It arouses a desire for better living conditions. Our Advertising Editorial service makes advertising easy for you. Every week we send a reprint of this page and the illustration in the form of an electrotype, All you do is hand them to your local newspaper. Send in your order today. Only $4.20 for three months' service. Get your business in the public eye.

Use this copy—whether you use the illustrations or not. The important thing is—advertise, get in the public eye.

SALES LETTER

One a Week—No. 119

People are finding a slow market for real estate. In order to sell quickly it is necessary that a building be unusually well equipped. The following letter on remodeling will find ready response.

JOHN BROWN
Plumbing : Heating

Two Rivers, N. Y.,
August 20, 1927.

Mr. Edward Jones,
Two Rivers, N. Y.

Dear Sir:

There is a special problem these days in disposing of residential property—whether of the single-family type or an apartment house.

The buildings which have been put up in the past twelve or eighteen months have had incorporated extra refinements, such as extra bathrooms, or bathrooms very beautifully equipped; and with special attention paid to the heating equipment.

Buildings put up prior to that time have to rent or sell in competition with these up-to-date buildings. You will note that those who wish to buy or rent give rather critical attention to the plumbing and heating of a building. They have become accustomed to a fine type of fixture, to an extra bath in the home, to a heating plant which requires a minimum of attention.

We would be very glad of the opportunity to make suggestions for remodelling your building—protecting its sale and rental value in the face of this competition.

Very truly yours,
JOHN BROWN.

Adlet

ONE A WEEK—No. 140

SPEAKING of getting into the public eye—you know that a small grain of dust can seem like a mountain. Small space in the newspaper, well and consistently used, will bring response. For that reason we carry on this page each week the little Adlet, which may be used alone, or in conjunction with the Advertising Editorial. All you have to do is copy or clip out the Adlet below, add your name, telephone and address and hand it to your paper.

To Sell or Rent

A house or apartment these days—its plumbing and heating must be right up to the minute to compete with the fine new buildings. Let us give you an estimate on remodelling your home or apartment.

Canadian Plumbing Practice

By R. M. STARBUCK, Jr.

ALWAYS in these articles have we intended to give *our Canadian brethren equal consideration with our* own; indeed, there is and can be no reason for doing otherwise. We are led to make these remarks because of the receipt recently of a complaint from one of our readers that we have been overlooking Canadian practice rather consistently. Our own opinion of such a statement as this is that the maker of it cannot have been a *close reader of his trade paper at all times.*

However, the accusation, true or otherwise, has had the effect of waking us up a bit to a situation that we intend to guard against, for in the plumbing line, as in other lines, Canadian interests are with us the same as our own. So far as we can see, there is no special difference in the work of the two countries, although there may be some *difference in fixtures, fittings, etc.*

The complaint that we have alluded to was in the following words: "I find that 'Domestic Engineering' does not cater to matters Canadian—by that I mean that our by-laws are different, and therefore our layouts must be different."

We think that our correspondent is in the wrong when he states that Canadian plumbing laws are different from those of the United States, and therefore Canadian plumbing layouts are different. As a matter of fact, so far as our knowledge of the subject goes, Canadian plumbing practice is in general very much like that in the United States. There are one or two cities in Canada which have *a plumbing system very much their own, quite different* from general Canadian practice and also quite different from United States practice. However, we can name numerous cities in the United States that have also strayed far from the beaten path of orthodox plumbing practice.

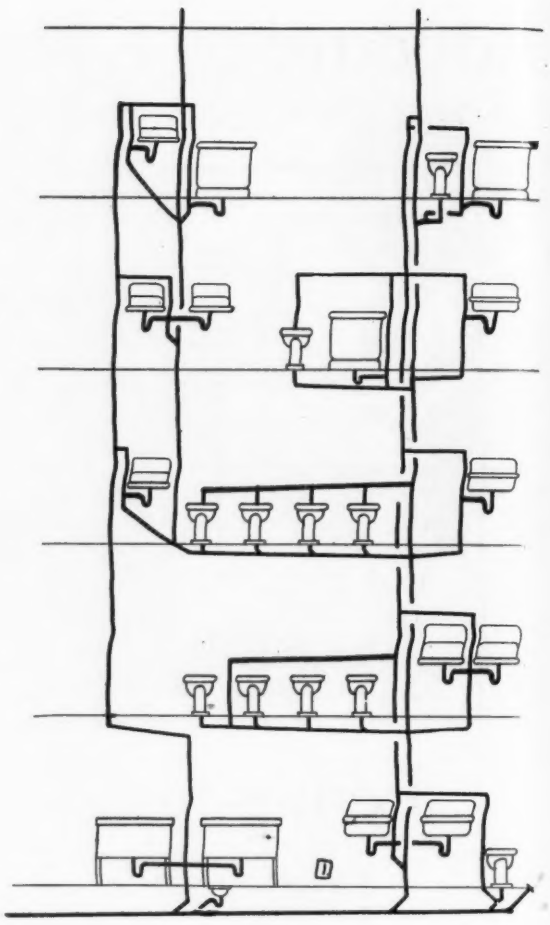


Fig. 1

A SURVEY OF CANADIAN PLUMBING CODES

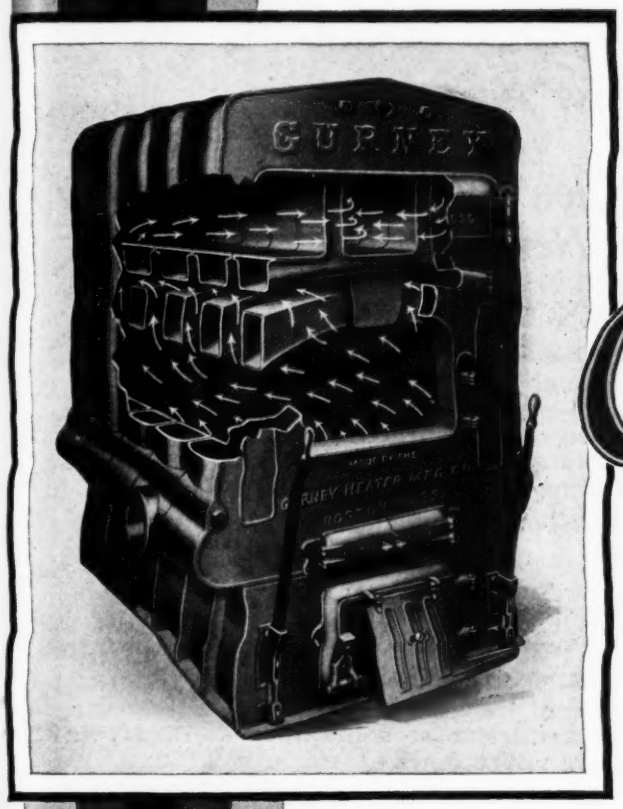
AND so we are going to devote this article to a general survey of plumbing conditions in Canada, as reflected by Canadian plumbing codes.

In "Domestic Engineering," Sept. 25, 1926, we devoted much space to the tabulation of state plumbing laws and municipal plumbing laws, and in this tabulation was included all the information that we could obtain.

Of the eight Canadian provinces we received official information from seven, relative to the status of the plumbing law that was on their statute books. This information is given in the table on the following page.

Just how many Canadian cities are now working under a municipal plumbing code we are unable to say, but in *our collection of such codes we find 19 of the* Canadian cities represented, these being: Edmonton, Alberta; Vancouver, B. C.; Victoria, B. C.; Winnipeg, Man.; St. John, N. B.; Montreal, Que.; Brantford, Ont.; Fort William, Ont.; Kitchener, Ont.; London, Ont.; Ottawa, Ont.; Peterborough, Ont.; St. Catharines, Ont.; Toronto, Ont.; Windsor, Ont.; Moose Jaw, Sask.; Regina, Sask., and Saskatoon,

City or State	Date of Latest Revision	Type of Venting Specified	Unvented Anti-Syphon Traps Allowed	Use of Wet Vents	Use of Main Trap	Requirements for License to do Plumbing
Alberta, Prov. of	1923	Continuous and circuit			Prohibited	
Edmonton, Alta	1923	Continuous and circuit			Prohibited	Examination for masters and jours.
Vancouver, B. C	1923	Continuous and circuit	Fixtures at center of room	In extensive use	Prohibited	Registration only for masters.
Victoria, B. C		Continuous	When impossible to vent	Not allowed		No regulations.
Winnipeg, Man	*1920*	*Continuous and circuit*	Approval of inspector	Extensively	Required	Registration only for masters.
New Brunswick, Prov. of						*Provincial examination for masters and jours.*
Brantford, Ont	1918	Continuous and circuit	On permit		Prohibited	No regulations.
Fort William, Ont	1920	Continuous	No	Under special conditions		No regulations.
Kitchener, Ont	1923	Continuous	On permit			No regulations.
London, Ont	1921	Continuous, modified crown	Yes	Not allowed	Required	No regulations.
Ottawa, Ont	1923				Permitted	No regulations.
Peterborough, Ont	1920				Required	Registration only for masters.
St. Catharines, Ont	1914				Required	No regulations.
Toronto, Ont	1917	Continuous	Under extreme conditions	Not allowed	Required	No regulations.
Windsor, Ont	1921	Continuous	At center of room	Not allowed	Required	Examination for masters.
Quebec, Prov. of			Yes		Prohibited	No regulations.
Montreal, Que	*1922*		Yes		*Prohibited*	*Examination for masters and jours.*
Saskatchewan, Prov. of		Continuous and circuit			Optional	No regulations.
Moose Jaw, Sask	1912	Continuous			Prohibited	Registration only for masters.
Regina, Sask	1923	Continuous and circuit	In old bldgs	For lav. and bath	Prohibited	Examination for masters and jours.
Saskatoon, Sask	1919				Prohibited	Examination for masters and jours.



Gurney

The exceptionally long flue travel of the Gurney 900 Series Boilers is a talking point *that sells many* an installation.

The many heating contractors who specify Gurney are quick to point out to prospects the decided advantages of this time-tested engineering principle.

Let us send you complete information on the Gurney 900 Series Boilers.

GURNEY HEATER M'F'G COMPANY

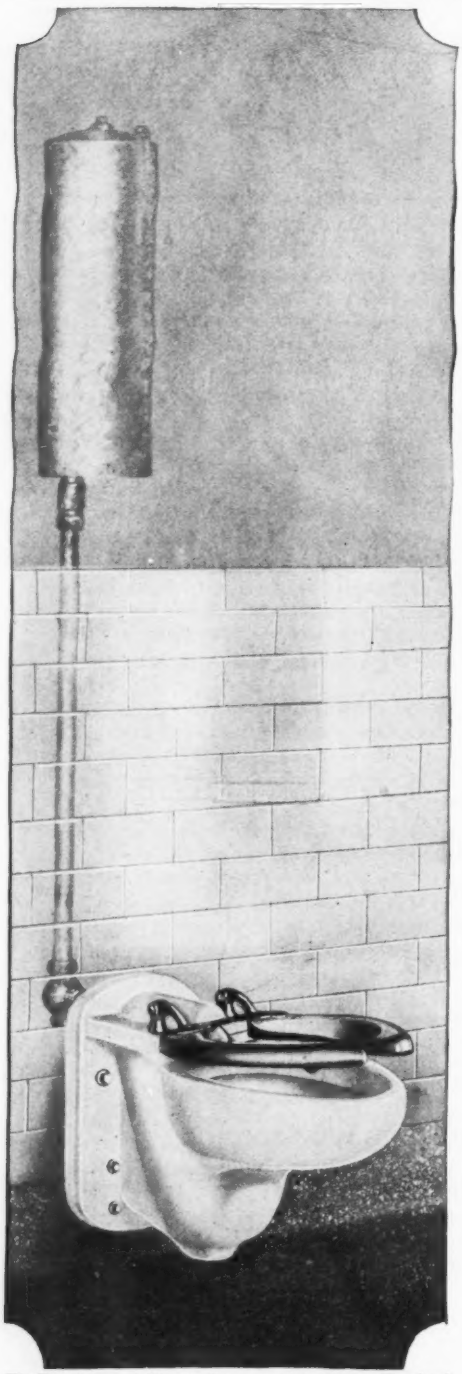
GENERAL OFFICES • BOSTON, MASS.
93-97 OLIVER ST., FORT HILL SQUARE

GURNEY HEATER CO., Inc.
New York City Office and Warehouse
Manby St., Cor. Anable Ave.
Long Island City

GURNEY HEATER M'FG CO.
Richmond Office
Cor. East Main and Ninth Sts.
Richmond, Va.

GURNEY HEATER CO., Inc.
Philadelphia Office and Warehouse
Cor. 21st St. and Washington Ave.
Philadelphia, Pa.

BAR THESE DISEASE CARRIERS



The Clow Automatic Closet in the new, wall-hung type. The closed top tank is placed behind the back wall in a utility corridor.

with

Sanitation-Assuring Clow Automatics

—Clow Automatics Never Forget

A SINGLE unflushed closet in a school is more dangerous than a stick of dynamite. Leave it unflushed—as careless children do—and it becomes an attractive lure to flies. They quickly start their work of spreading any disease left there, to the lunch boxes, lips, and hands of children.

The Clow Automatic Closet removes all possibility of forgetful children leaving closets unflushed. Automatically, after every occupation, a fast, sure flood of water — with the pressure of a thirty-foot standpipe — scours the entire bowl.

The Clow-Madden Valve is simply constructed. It has no intricate parts to get out of order. It lasts longer — asks less for repairs — and uses less water.

By leaving nothing to childish memories or intricate mechanisms, the Clow Automatic gives certain sanitation to the school.

Our "Clow School Plumbing Catalogue" fits your files, and shows the way to surer sanitation.

JAMES B. CLOW & SONS
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AUTOMATIC CLOSET

Forty-Eight Styles, Heights And Types To Meet Your Requirements

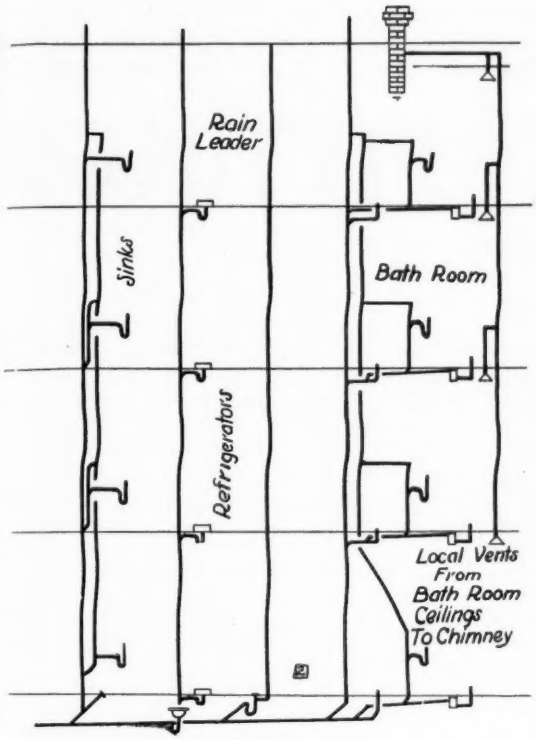

Fig. 2

Sask.; also St. John, Newfoundland, the latter being a government separate from Canada. Undoubtedly there are a few other plumbing codes in the Canadian cities, but we have not been successful in obtaining them.

In the Sept. 25th tabulations, alluded to above, the tabulations made concerning plumbing practice in the Canadian provinces and cities were as given in the table on the preceding page.

DATA ABOUT PLUMBING CODES OF CANADA

Province	Source of Information	Status of State Laws—General Remarks
Alberta	R. B. Owens, Provincial Sanitary Engineer	A state plumbing law of 100 sections has been enacted..
British Columbia	H. E. Young, Provincial Health Officer	There is no provincial law other than regulations covering the weight of cast iron soil pipe, and the use of fittings on soil, waste and vent lines.
Manitoba		No information.
New Brunswick	George C. Melvin, Chief Medical Officer, Dept. of Health	A plumbing code of considerable completeness is in force. Masters and journeymen must have state examination and license.
Nova Scotia	A. C. Just, Provincial Health Officer	No state plumbing laws.
Ontario	Chief Officer of Health	No state plumbing laws.
Quebec	Victor A. Fournier, Ass't. Sanitary Eng. Provl. Bureau of Health	An outline of plumbing law has been adopted, covering seven principal points.
Saskatchewan	N. N. Seymour, Deputy Minister of Public Health	A complete plumbing code was adopted in 1921. A most excellent publication, "Sewage Disposal for Rural Homes in Saskatchewan," fully illustrated, is freely distributed by the provincial Department of Public Health.

The above, of course, represents only a small part of plumbing practice, but comparison of this data with that shown for cities of the United States will show that there is no difference; one country runs along about the same as the other. A comparison of the plumbing codes of the two countries shows no particular differences. We have known these things all the way along, and have never felt the need of calling special attention to features that we felt were particularly Canadian, for we are not aware of such differing conditions and practices as to make one practice Canadian and another American.

CANADIAN PLUMBING ILLUSTRATED

TO PROVE the truth of our position, that plumbing in Canada is practically the same as that of the United States, we are going to show several illustrations of Canadian plumbing systems that we have gathered together.

In Fig. 1, for instance, we show an elevation of work done in Edmonton, Alberta.

We would call this high-class plumbing, with very little to criticize. About the only point to criticize is the fact that three top floor fixtures are vented which could be served by stack vents at a considerable saving in expense. Continuous venting is much in evidence. As a matter of fact, reference to the tabulation we show of Canadian cities shows all of them using continuous venting. Fig. 1 shows two types of venting used on water closets, both being considered O. K.

Winnipeg, Manitoba, calls for good plumbing, and Fig. 2 shows the type of work demanded. Certainly there is small room for criticism of anything in this layout. Some might object to wet-venting the bathtubs, but this idea is very generally coming into use now, and in our opinion when properly installed such a wet vent is good work.

A notable feature of this elevation is the method shown for ventilating toilet rooms. A cone-shaped receptacle is placed in the ceiling of each bath room, and these receivers are connected by funnel into a main local vent pipe which leads into a heated flue. We do not recall having seen this type of local venting used elsewhere. Undoubtedly it is strong in its action, and the only thing we have against it is that the receivers are located so far from the origin of the odors arising in the use of the fixtures, that the odors have to travel through the atmosphere of the room before reaching the local vent receivers.

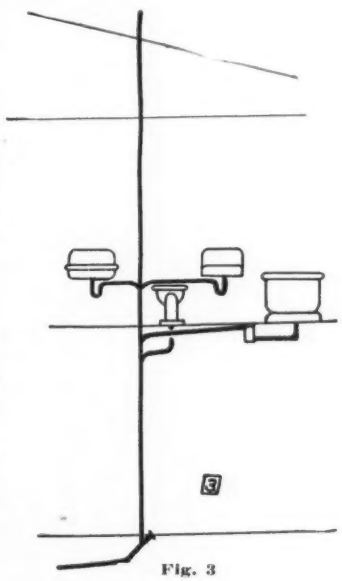

Fig. 3

A BUNGALOW LAYOUT FOR WINNIPEG

FIG. 3 shows a typical bungalow layout as called for in Winnipeg, and it is to be commended for its simplicity, which in no way detracts from its excellence.

Fig 4, as we understand it, shows the work that is done in Chatham, Ont.

The most that can be said against this layout is that crown venting is employed to quite an extent, although it is more than likely that this is not actually representative of this city's practice. We note that two lavatories, two sets of laundry tubs and two urinals are allowed to use a single trap, whereas we think there is no question that a better practice is to trap each fixture separately. Notwithstanding these minor criticisms, the work of Fig. 4 as a whole is very commendable.

The Winnipeg venting methods are definitely laid down, and are of very high order. The venting of batteries of the various fixtures is defined with special clearness. These venting methods are shown in Fig. 5. They provide circuit or loop venting for not only water closets, but for most other fixtures, such as lavatories, urinals, etc.

STOCKHAM FITTINGS

The name Stockham is on the fittings in
BROOKLYN'S
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"Quality is Demonstrated by Their Performance"

CAST IRON OR MALLEABLE
SCREWED, FLANGED, DRAINAGE
***for* GAS, WATER, STEAM, OIL *or* AIR**

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COMPLETE CATALOG

BUY FROM
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THE excellence of Stockham Fittings is recognized for important structures everywhere. For twenty-five years the entire resources of the Stockham Plant have been devoted to the manufacture of pipe fittings exclusively. Forty-seven inspections and tests from raw material to finished product insure the Stockham quality standard and result in time and money saved on the job. Strength far in excess of probable strain, perfect threads and flanges, chamfered faces, easy machining qualities, smooth inner surface, excellent finish—are details that make Stockham Fittings preferred by the man on the job.

STOCKHAM
PIPE & FITTINGS COMPANY
BIRMINGHAM, ALABAMA

Warehouses with Complete Stocks in

BOSTON NEW YORK CHICAGO LOS ANGELES

We believe it will be conceded that the illustrations which we have shown, and which we believe to be typical of Canadian plumbing practice, show work that is identical with United States practice.

There is at least one city, however, Vancouver, B. C., which has a plumbing ordinance quite different from those of other Canadian cities—in fact different from any of the ordinances of the United States that we are acquainted with.

In Figs. 6 and 7 we show elevations based on the Vancouver ordinances, and they will be found well worth studying.

It will be seen that wet-venting is more freely used in these two layouts than in almost any city in the United States that we can think of. The only work approaching the Vancouver work that comes to mind is that of Atlanta, Ga., where the need of venting is obviated by using very large sizes of main stacks. Under such conditions, of course, the danger of siphonage is no doubt completely overcome, and in so far as this is concerned, a great advantage is gained, but whether the cost is greater or less under this system we have never heard.

Likewise, in the case of the Vancouver work, while venting is no doubt considerably reduced, it looks to us as if considerably more pipe were used. It would be interesting to know whether this system is installed as cheaply as the common vented system.

The Vancouver system certainly differs greatly from work as done in the United States, and from other Canadian cities, but we want to call attention to the fact that the difference in the practice of this one city should not make it appear that Canadian plumbing practice is a different thing from United States practice, for we could name a goodly number of cities in the United States that have plumbing systems of their own that differ as much from the regular system as the Vancouver system does.

We hope that master plumbers and plumbing inspectors in Canada will write us frequently about their progress for we have a common interest in sanitation.

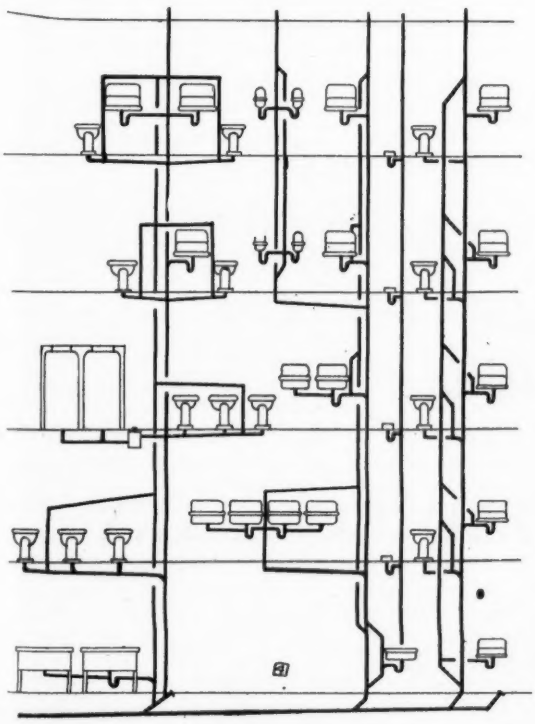


Fig. 4

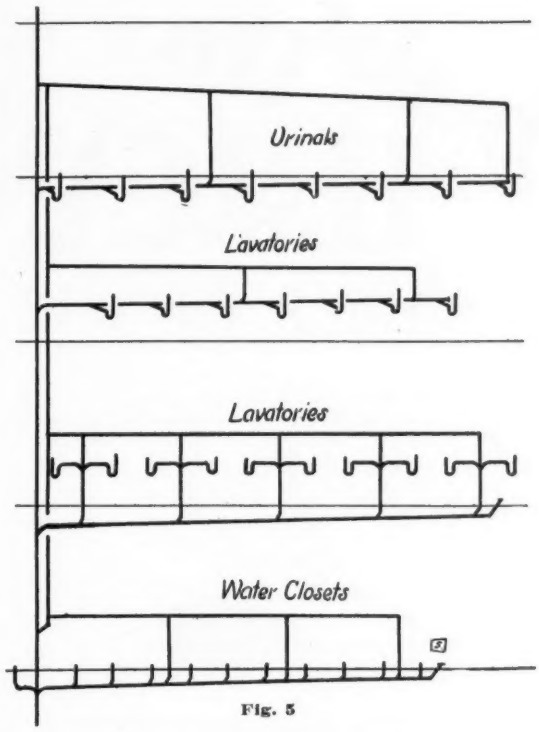


Fig. 5

THE VANCOUVER ORDINANCE

WE BELIEVE that the source of the difference in the Vancouver plumbing system is to be found in the two ordinances which follow:

No fixture trap on any branch of any soil or waste-pipe stack which extends in undiminished head size through the roof of any building shall be required to be back vented where the aggregate sectional areas of all the branches thereof discharging into the stack above the said branch and fixture trap do not exceed two-thirds (2/3) of the area of such stack; provided the waste portion of the stack above the point of connection of the said branch and fixture trap is in the same vertical line as the portion below such branch fixture system.

Where vertical waste-pipes receive the discharge of wash-basins or apartment house kitchenette sinks, back-venting of the traps of such fixtures may be omitted; provided that the aggregate area of all waste entering the waste-pipe in connection therewith shall not exceed one and two-third times the area of such waste-pipe; and provided, further, that each individual trap in connection therewith shall not be more than two (2) feet six (6) inches distance from its branch connection. Any offsets in any of aforesaid stacks shall not exceed three (3) feet from the vertical line.

The Vancouver ordinances are particularly clear concerning the regulations governing circuit and loop vents. These ordinances are as follows:

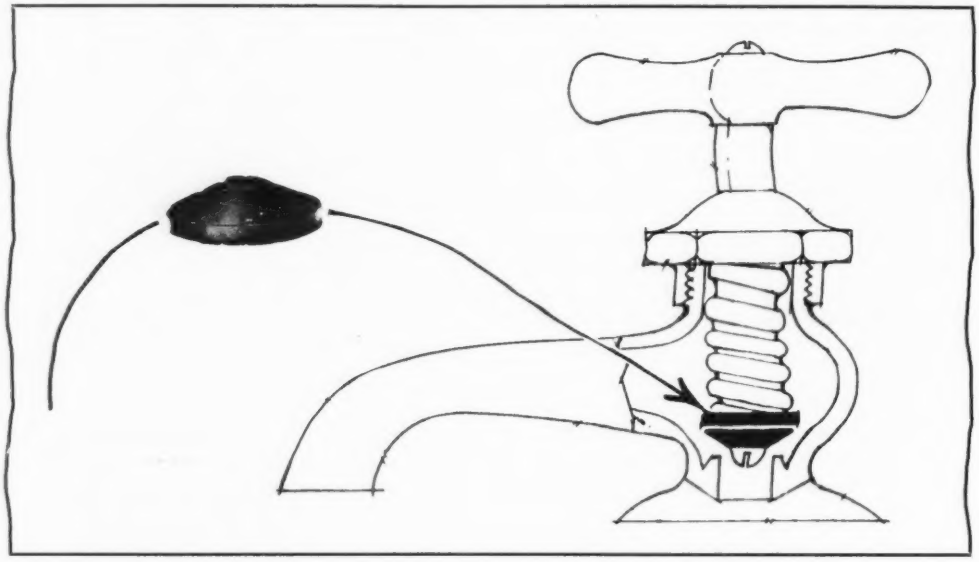
Any branch, soil, or waste-pipe, to which a group of two or more water-closets, porcelain stall urinals, or slop-sinks is connected, may be vented either by a circuit or loop vent.

Where such branch soil-pipe on a circuit-vent system shall measure less than twenty-five (25) feet from the main soil-pipe to the furthermost fixture in connection therewith, and where there are not more than four (4) such fixtures thereon, the vent

(Continued on Page 69)

Insist On H.O.CANFIELD CO.

WASHERS IN THE FAUCETS YOU BUY



Why buy faucets equipped with inferior rubber goods that you must replace before using?

THE H. O. CANFIELD COMPANY

BRIDGEPORT *CONN.*

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QUESTIONS

ASKED BY OUR READERS AND ANSWERED BY OUR EXPERTS

The Questions and Answers Department is open to all readers. Here their questions are answered—their problems solved. And, what is more, this department is an open forum, where readers may discuss plumbing and heating subjects. Don't hesitate to ask questions about the things you want to know, and don't fail to send in your comments and criticisms of questions that have been answered. While all questions are answered by men who are expert in their particular lines, your experiences may help a fellow craftsman who is in need of information. This department is for the craft. Use it freely. There are many ways to untie knotty problems.

TO HEAT TWO BUILDINGS WITH ONE BOILER

Editor, "Domestic Engineering":—I have a heating problem in accordance with the enclosed sketch. The customer wants to heat building No. 2 with the boiler in building No. 1. Please advise me the best manner in which to make the connection.

Mississippi. W. P. C.

We suggest four solutions to your problem, but more knowledge of the problem is necessary before any one solution can be selected as the best and, being right on the ground, you can make this selection yourself.

1. We suggest pitting boiler No. 1 sufficiently so that the supply main to boiler No. 2 will be just below the surface of the ground.

2. Install an electric condensation pump and return condensation from boiler No. 2 to boiler No. 1 with this pump.

3. Install an automatic boiler feed on boiler No. 1 and waste condensation after it has passed through plant No. 2.

4. Change piping in plant No. 2 to a hot-water system, providing the radiators are of the hot-water type; install an indirect heater below the water line of boiler No. 1, with feed and return mains from boiler No. 1 to boiler No. 2 just below the surface of the ground.

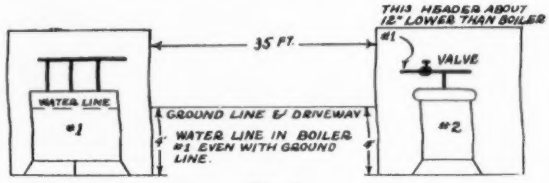


Fig. 1

Indirect heaters are made in various sizes and will heat as much as 750 sq. ft. of water radiation.

TWO RANGE BOILERS ON THE SAME PLUMBING SYSTEM

Editor, "Domestic Engineering":—I am sending you a diagram of two range boilers in one plumbing system. One boiler is connected to a stove in the kitchen, and the other to a laundry stove in the basement. When the owner draws hot water in any faucet in the house, and one boiler contains hot water and the other cold, the water at the faucet will be only lukewarm.

I put a check valve with a spring on the boiler in the basement, to hold it closed except when pressure is produced. When a fire is burning in the kitchen stove, hot water runs at the faucets, but when a fire is built in the laundry stove, and there is none in the kitchen stove, cold water is drawn out of the kitchen tank. Kindly let me know if there is any way by which the hot water from whichever tank contains it can be drawn when the faucets are opened.

Indiana. K. A. K.

Pipe A, ¾ inch in size, should be installed as shown, from return connection at tank No. 2 to return connection from tank No. 1. Pipe B should be installed so that hot water from tank No. 1 will enter side opening of tank No. 2. Pipe C is the hot-water supply line to fixtures and connection at D is plugged. Valve at E is not required and can be removed.

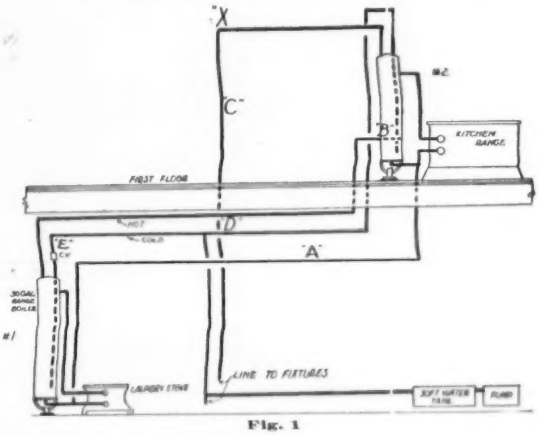


Fig. 1

Unless there are fixtures on the second floor, there is a probability that air will collect at point X. If there are no fixtures above X, it may be necessary to install an air relief valve to be used when necessary.

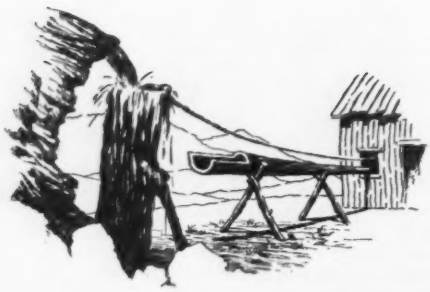
Moundsville, W. Va.—Moundsville will construct a new swimming pool, 150 by 94 ft. and 9 ft. in depth.

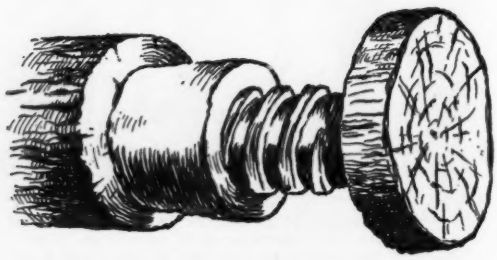
Columbus, Wis.—The city park board has voted to build a swimming pool here, and will receive bids for the same.

Washington, D. C.—A new bathhouse, beginner's pool and swimming pool will be erected at the McKinley high school grounds, First and R streets, N. E.

Oxford, Ga.—The contract for the building of a swimming pool on the campus of Emory university academy has been let to J. C. Ellis of Oxford. It is expected that the pool will be ready for the opening of the academy.

San Clemente, Calif.—Working plans are being completed by Architect Virgil Westbrook for a beach club building and large salt water plunge. The building will contain dressing and locker rooms, kitchen, dining room, lounges and terrace roof garden. The plunge will measure 45x105 ft., ranging in depth from 3 to 9½ ft.; it will hold 196,000 gallons and will be built of reinforced concrete, complete with filtration systems, pumps, etc.





This is one of a series of picture stories on the Manufacture, Use and Handling of

No.32

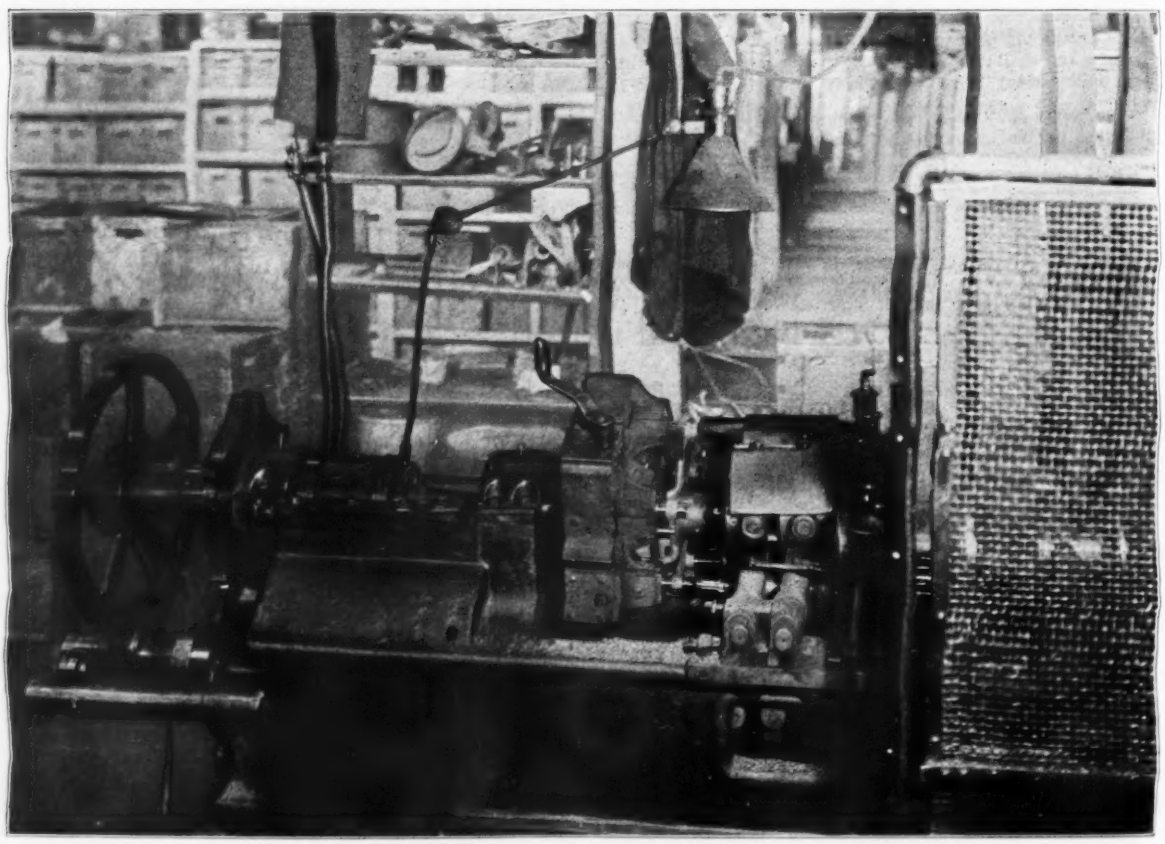
FAUCETS

BELOW is illustrated a semi-automatic machine which makes cup ends for lavatory faucets. At the top of the page are pictured two faucets used in widely separated parts of the world, and which may be taken as milestones in the history of man's struggle for a device which would stop and release the flow water in a pipe.

In the contrivance pictured at the upper left of the page, a section of a treetrunk was hollowed out so that it would hold water. It was then so balanced on a peg or pivot that the pressure on its upper end would cause it to empty. This was accomplished by means of a string from the dwelling. When the string was pulled, the water flowed into a trough or tube which led to the house. The section of tree trunk was, of course, set under a continuous flow of water, which in some instances, was some distance away.

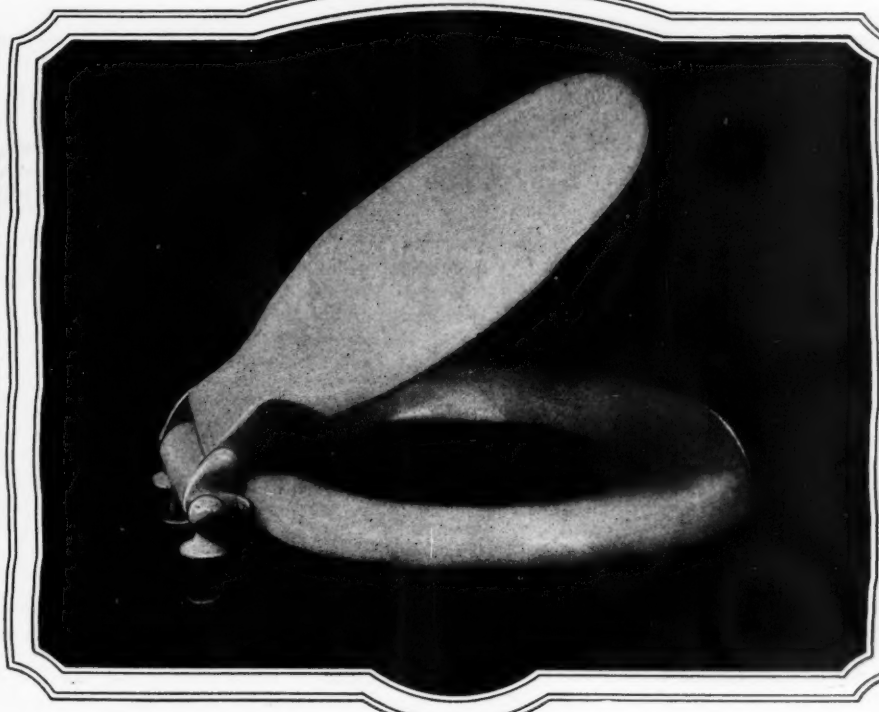
Machine used for washing faucet and valve castings

The construction of the faucet at the upper right of the page may be seen from the illustration.



A semi-automatic machine which makes cup ends for lavatory faucets

THE LARGEST MANUFACTURERS OF TOILET SEATS IN THE WORLD



NEVER-SPLIT "Perma-White" No. 1025 [Sheet Pyralin Covered] NEVER-SPLIT "Coloro" Series No. 1200

These Beautiful New Seats Have Proved Their Great Profit Producing Abilities

From plumbing stores all over the country come enthusiastic reports. Never-Split "Perma White" and "Coloro" Seats are great sellers—great profit makers!

And no wonder! Look at the beautiful seat pictured here. What customer would look further for elegance and grace and refinement? Befitting the most luxuriously appointed bathroom — yet perfectly correct for less pretentious installations. And for effective new bathroom decorative schemes, the "Coloro" seats—any tint or color combination desired.

These new seats are covered with extra-heavy, velvety smooth sheet-pyralin—snowy white in the "Perma-White"; a wide variety of colors in the "Coloro." Welded by a patented process this sheet pyralin becomes an *integral part of the seat itself.* Its flawless, highly buffed surface is easily cleansed with hot or cold water and soap. Absolutely guaranteed not to peel, crack or discolor. Fittings correspond in excellence throughout. Made in a variety of sizes and models to fit any bowl.

Evernu
Everlasting Hard Rubber
Seats

These beautiful Never-Split *"Evernu"* hard rubber seats are the ideal specifications where hard usage is to be expected and long-term economy is important. Molded in one piece, by the patented Evernu process. Hollow center provides unusual lightness and strength. Lustrous buffed surface, either black or mahogany, can be cleansed with dilute alcohol without injury. Guaranteed not to warp, chip or crack.

Samples and our trade building service sent on request. *Be sure you have our new* catalogs on the *Never-Split complete line.* Write today.

THE NEVER SPLIT SEAT COMPANY, Founded 1905, Dept. 24, Evansville, Ind., U. S. A.

NEVER-SPLIT SEATS

"Perma-White" Sheet Pyralin | "Coloro" Tinted Sheet Pyralin | "Evernu" Hard Rubber | White "Duco" Sprayed Pyralin | Varnished Wood Patented Construction

50th Anniversary 1877-1927

Kennedy Malleable Iron Fittings may cost a fraction of a cent more than the cheapest fittings you can buy, but they save many dollars of pipe-fitting time by protecting you against imperfect threads, leaky connections, and split fittings.

Send for catalog.

THE KENNEDY VALVE MFG. CO. ELMIRA, N.Y.

New York Boston Chicago San Francisco Philadelphia
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KENNEDY

VALVES-PIPE FITTINGS-FIRE HYDRANTS

On the Job with Dolan & Olson

(Continued from Page 24)

one of the hot-water tanks. Slow work, boy. Pretty hot, too. Kind of dusty. Out of cigarettes. Nothing to do but hike over to the store and get some.

Met a couple of the gang. Just going fishing. All set for a trip and room for one more. Come on along, come on along.

Well, it was hot and sultry. No danger of anything freezing for a while. And it was cool, away up in the North Country and the fish were biting, and so he hiked home and got into his fishing togs and grabbed his outfit and went fishing.

And when he got back, he forgot all about the draining job. Forgot it until just the one day last winter when he was showing a prospective tenant through the building, and then he came busting into the store and wanted some fire department action.

He got it, also a bill for that same action: One broken water meter. Four closetbowls and tanks. Four sections in the heating boilers. Seventeen of the radiators. Three hot-water tanks. And a whole mess of pipes, fittings, valves, faucets, heating appliances, etc., etc.

All in all, his little "job" in the first place, coupled with that fishing trip, cost him eight hundred dollars, which was a pretty high price for ten pounds of fish.

But before he got his bill and before we started work, we had to go with him and look it over. That was on a Saturday. Things sure did look dismal. Broken range tanks, pipes and fittings and colder inside the building than out of doors, so we agreed to be on the job Monday morning, and we were, but we were hardly prepared for what we found.

In shutting off the water, the Big Boy had turned the valve INSIDE of the meter and evidently right after we had left there on Saturday, the meter had broken, and by the time that we got there on Monday morning the water was up to the basement window sills.

So we had to dig down through the ice and snow to the stop box at the curb and shut off the water; then we called on the fire department for assistance and they sent over a pumper and pumped the water out of the basement.

All of which contributed to make a sweet mess and one that the Big Boy will remember for many years to come.

And now, with the sun shining and the thermometer trying to make it a hundred in the shade, we are sending out letters asking people to call us right now for heating repairs. Pleasant subject for a day like this, but if we can only get their orders now instead of next October when the first cold winds begin to blow—but, shucks, it will be the same old story and we'll be hopping night and day trying to keep Jack Frost out, and our letters of warning will be in the files.

Cape Girardeau, Mo.—The Cape Girardeau Hotel Co. is having plans prepared for the Hotel Marquette. R. K. Knox will supervise building operations.

Oakland, Calif.—The heating contract on the reinforced concrete high school building, to be situated at Park boulevard and Hopkins street, was awarded to W. K. Nottingham, 372 Tenth street. The plumbing and gas fitting work went to the Scott Co., 113 Tenth street.

Walpole, Mass.—An addition to the high school will be built at a cost of $275,000. McLaughlin & Burr, Boston, have been chosen as the architects. Provision is made for 750 additional pupils, and the addition is to be completed by September, 1928. Plans will be ready for figuring inside of two weeks.

Don't Delay

ANY LONGER

SELL HONEYWELL NOW

Genuine necessity for the positive, accurate control which *Honeywell* assures, offers you an additional source of income *now* before the cold weather actually arrives.

Home owners are ready and waiting to profit by the added convenience, comfort and economy which *Honeywell* control will bring them. They only need you to tell them, "sell" them, and they will buy.

Honeywell simplicity and dependability mean that your first profit will not be lost in costly servicing. *Honeywell* controls have nothing to get out of order—no trouble breeders, no commutator, no armature, no windings.

Tell your customers about Honeywell NOW—and get your share of the automatic control business

HONEYWELL HEATING SPECIALTIES CO.
WABASH, INDIANA

HONEYWELL
Temperature Regulators

Out of Sight---Out of Mind!

Concealed Lavatory Fixture with Brown Pop-Up Waste—a Typical Chicago Faucet Job

Complete and lasting satisfaction for all concerned is the life history of this typical Chicago Faucet fixture favored in many important installations.

Readily adjustable to meet all conditions; easily installed; capable of life-long service with a minimum of repair—here is a lavatory fixture that is fundamentally right in every particular.

Like all Chicago Faucet fixtures this one has the advantage of our *standardized, removable working unit,* insuring quick, easy repairs at low cost. Replacement will never be necessary as long as the building stands.

You'll find this fixture much to your liking, and so will your customers. Chicago Faucets build good will—try them and see.

Write for full information about this fixture and let us make you acquainted with our full line.

THE CHICAGO FAUCET CO.
2700-22 No. Crawford Ave. Chicago, Ill.

List Price, $18.50
With China Spout, $21.00

Plate D-1905
China Spout, 3¾ inches center to center.

Plate D-1906
China Spout, 4¾ inches center to center.

Standardized Removable Working Unit
All wearing parts quickly and easily replaceable at small expense. No wear on the body casting—therefore everlasting.

Adjustable!

Swivel supply arms make this fixture adaptable to any type of lavatory, regardless of relative position of valve and waste holes. The Brown Pop-up waste is remarkably simple in construction and easy to install.

CHICAGO FAUCETS

SCIENTISTS STRIVE TO MAKE AUTOS AND TRAINS COOLER

Automobiles of the future will have white roofs, along with railroad trains and homes, while each will carry a wet sheet, a strip of damp burlap or some other cooling device for combating the extreme heat of torrid zones or seasons, if elaborate ventilation tests being conducted in the United States Bureau of Mines in Pittsburgh mean anything.

Leading engineers in the motor car industry and officials of several of the big railroads are giving their active co-operation in experiments which seek to make transportation of all kinds, as well as home and school life, more comfortable and healthful by mechanically controlling the air and climatic conditions.

The Southern Pacific and other western railroad lines have offered the use of several railroad cars for the experiments and will haul these cars with scientific apparatus through the hot sections of Arizona and Southern California in efforts to bring relief from the suffocating heat. The Pennsylvania has offered the use of its equipment after the scientists complete their tests in the laboratory.

That colors have definite reactions not only on the psychology of people, but do deflect or absorb the heat of the sun's rays, have been definitely established by these tests, according to F. C. Houghten, director of the research laboratory of the American Society of Heating and Ventilating Engineers in the Pittsburgh bureau of mines. Mr. Houghten and his staff tested the effect of colors on roofs of buildings and automobiles and found that, while black absorbs the heat and draws it within, white, more than any other color, deflects the heat. In these tests they were aided by the Nicholls heat meter, which is so delicate that it will measure the warmth of a maiden's blush. It was found that red deflects these rays somewhat but is not nearly so effective as white.

The bureau has erected within its laboratory a burlapped drum to test the relative cooling effect of evaporation. The burlap is saturated with water and automatic thermometers make a record of the temperatures inside and outside the drum. At times, a battery of ventilating fans are turned loose to determine exactly the humidifying and cooling effect of air motion through water. The effect of the cooling by evaporation alone was shown to make a difference of eight to twelve degrees in the temperature. Physiological tests showed that air motion created by the ventilating fans gives the body a further cooling sensation and actually lowered skin temperatures.

"The point is that we have definitely established the fact that if motorists occasionally sprinkled the tops of their cars it would cause a noticeable cooling effect on the hottest days of summer," Mr. Houghten says. "Some of the railroads have aided in the experiments to the extent of placing a sprinkler system on the tops of railroad coaches. Small ventilating fans are used inside to keep the air moving in the right direction and to help handle the dust nuisance. Experiments successfully conducted in both automobiles and railroad coaches have shown that an ordinary bed sheet, tablecloth or strip of burlap, soaked in water and hung up like a drape or curtain, produces the feeling of a lower temperature. This method is frequently used in India in trains and other public vehicles there to help relieve the effect of terrific heat.

"Some of the railroads have considered placing small refrigerating plants in coaches to cool the air, but it was believed that a simpler and more economical system of cooling by evaporation could be worked out."

Fremont, Nebr.—Lutherans in this city plan the erection of a $100,000 to $200,000 hospital near the Lutheran orphanage.

UNION Super Surface BOILERS

Adapted for burning any kind of fuel—hard or soft coal, wood, gas or oil.

UTILIZING all the effective heat units and with "Super-Surface" feature that means greatest heating efficiency and maximum economy, UNION Super-Surface Boilers provide a ready avenue of profit. Made on unit or sectional principle. *Write!*

UNION ART RADIATORS

The leading ART radiator designs, in all standard heights and sizes. Strong, durable, beautiful, PROFITABLE.

UNION Radiator Co.
Office and Works: Johnstown, Pa.
Branch Warehouses:
New York Philadelphia Chicago
Baltimore Harrison, N. J.

It's a *mind*-relief valve

That's what the customer will say about a Red Top Relief Valve, Model No. 1, after you have installed it in his domestic hot water supply. By relieving soaring pressures automatically, a Red Top relieves the mind of all fear of explosions. The home owner need not fear disaster as a result of neglecting to turn off a heater.

The action of a Red Top is easy to explain. It works on the gravity principle, pressure in the system forcing a nickel weighted piston off the seat. The lead ball in Model No. 1 is cast in four sections allowing relief at 50, 75, 100 and 130 lbs. (It should be set at least 25 lbs. higher than city water pressures).

Sectional view of Model No. 1

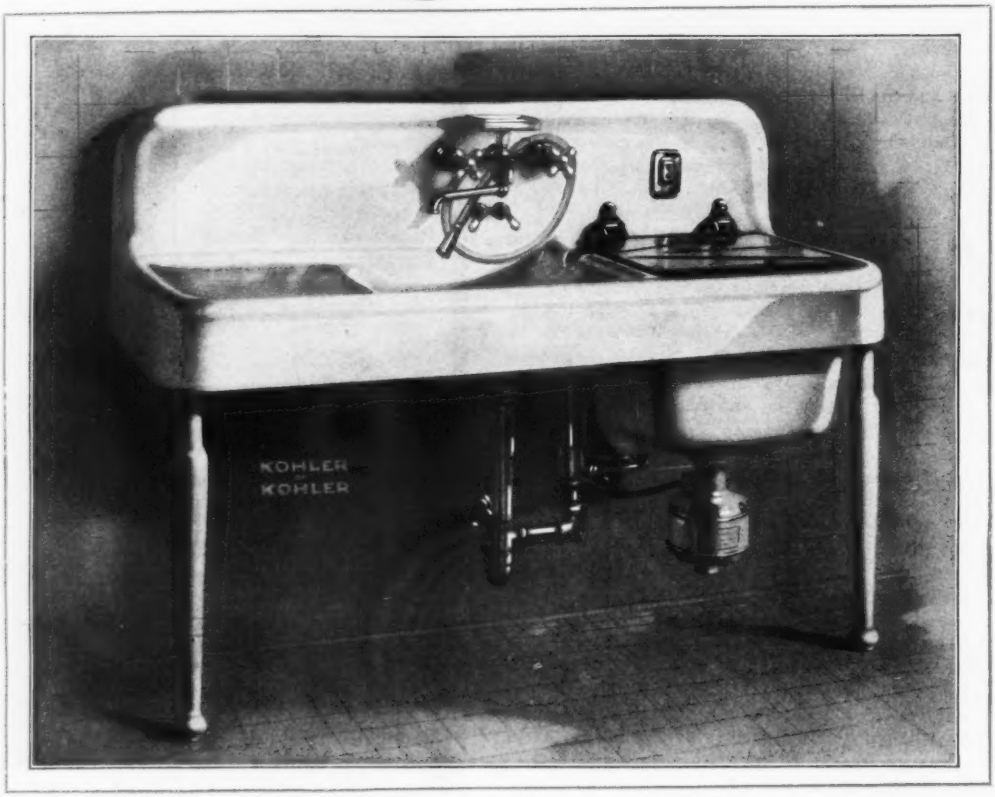
APPROVED by Underwriters Laboratories, Inc.

Red Tops bear the approval of the Underwriters' Laboratories, America's foremost testing organization.

Neptune Meter Company
50 E. 42nd St. New York City, N. Y
Branch Offices in Principal Cities

Red Top Relief Valves

The greatest



1 *The Kohler Electric Sink*
Made in 7 models

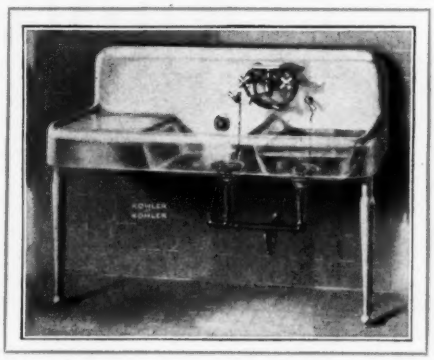
This fixture has inaugurated a new era of convenience, sanitation, and labor-saving in the home. It is the final, correct solution of a long-pressing problem. It has taken dishwashing out of the portable electric appliance field and put it where it belongs—in the plumbing field. The place to wash dishes is in a built-in fixture, permanently installed by a plumbing expert for proper water supply and waste drainage.

The Kohler Electric Sink is sold only through regular plumbing trade channels—not by department stores, electric shops, etc. It is offered to the consumer on a convenient time-payment basis which makes the plumber's selling job easier and enables him to go out and create new business. Enthusiastically approved by home economics experts, desired by millions of women who have read of it in Kohler advertisements, the Kohler Electric Sink offers an unequaled selling opportunity to progressive plumbers everywhere.

KOHLER OF KOHLER
Plumbing Fixtures

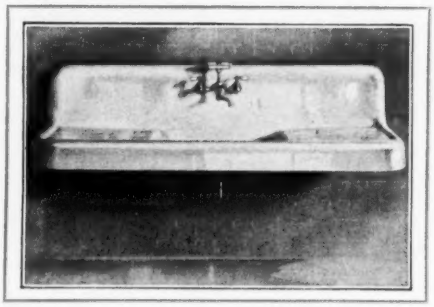
line of sinks

ever offered to the plumbing trade



2 *The Kohler Two-Compartment Sink*
Made in 4 models

The latest Kohler design, embodying many unique and valuable features. There are two compartments, for greater efficiency in washing and rinsing; also a waste control in each compartment, making a dishpan unnecessary. Fittings of Kohler make and quality embody improvements and refinements identical with those found in the Kohler Electric Sink.



3 *The Kohler Regular Sink*
One of 36 models

As every plumber knows, there are Kohler regular sinks of every kind and size, for every kind of installation. Roll rim or flat rim, plain or combination, the Kohler line of sinks is complete.

THE plumber who sells Kohler Ware is handling the most complete line of sinks in the world. He has a sink for every type of installation; to suit every pocketbook and every whim of the purchaser.

The Kohler line of sinks has always been noted for its completeness. But now it is complete in a larger sense. It not only comprises all the usual models, but also models which are entirely new—models which *create demand* and open up new fields of selling activity for progressive plumbers.

The Kohler Electric Sink stands out as the most important new plumbing fixture of the present century. It is new in principle, new in efficiency. It offers plumbers a brand-new opportunity to share the profits which dealers in other lines are earning by catering to the modern demand for the latest and best in labor-saving equipment for the home.

And now come the Kohler *two-compartment* sinks, with their many noteworthy improvements, making this opportunity even greater.

That is how Kohler completeness of line, Kohler progressiveness in design, and Kohler quality are building sales, profit, and good-will for plumbers who sell Kohler Ware.

KOHLER CO., *Founded* 1873, KOHLER, WIS.
Shipping Point, Sheboygan, Wis. · *Branches in Principal Cities*

KOHLER OF KOHLER

Plumbing Fixtures

MICHIGAN BOULEVARD "SLOAN" EQUIPPED

SLOAN FLUSH VALVES

ALONG Michigan Boulevard are buildings as fine as men can make them. From the majestic Stevens Hotel with its three thousand rooms to the stately Tribune Tower rising thirty stories above Chicago's famous thoroughfare—*Sloan Royal Flush Valves are used in every one of the buildings named above.*

Not only in Chicago, but in practically every city and town you will find Sloan Royal Flush Valves installed in the nation's fine buildings.

Sloan Royal Flush Valves can not be held open to waste water—nor operated to deliver an insufficient amount. Closing action is automatic and entirely out of the hands of the operator.

SLOAN VALVE COMPANY
CHICAGO

Albany, N. Y.	Buffalo, N. Y.	Denver, Colo.	Indianapolis, Ind.	Milwaukee, Wis.	Oklahoma City, Okla.	Seattle, Wash.
Atlanta, Ga.	Butte, Mont.	Des Moines, Iowa	Jacksonville, Fla.	Minneapolis, Minn.	Philadelphia, Pa.	St. Louis, Mo.
Baltimore, Md.	Cincinnati, Ohio	Detroit, Mich.	Kansas City, Mo.	Nashville, Tenn.	Pittsburgh, Pa.	Syracuse, N. Y.
Birmingham, Ala.	Cleveland, Ohio	Durham, Conn.	Los Angeles, Cal.	Newark, N. J.	Richmond, Va.	Tampa, Fla.
Boston, Mass.	Dallas, Texas.	Fort Wayne, Ind.	Memphis, Tenn.	New Orleans, La.	San Francisco, Cal.	Washington, D. C.
		Grand Rapids, Mich.	Miami, Fla.	New York City, N. Y.		

MARKETS

BUSINESS CONDITIONS IN LEADING JOBBING CENTERS

CHICAGO

Demand for plumbing and heating materials continues to maintain a steady pace in the Chicago territory and, while little change is apparent for the past week over the previous seven days, reports from sellers indicate slightly better business in some lines with others holding up well, the total volume of material moving into consumption and jobbers' stocks aggregating healthy proportions. In Chicago and surrounding territory apartment house and the residential type of construction continue strong. And office building construction, which in many localities is showing signs of tapering off, is at a high level, with $7,650,000 worth of this type of financing for new building construction reported during the last 30 days, according to a survey just completed by the American Bond & Mortgage Co. Contractors, as a result, are actively engaged and ordering material in large quantities. A pleasing factor to the entire situation is the ample supply of journeyman labor.

Wholesalers continue to hold their stocks at a level slightly above their early anticipated requirements and no delivery delays are encountered. Manufacturers appear to have ample supplies to meet the prevailing demand and, with production being maintained at a lively rate, are keeping well abreast of demand and in a position to make immediate deliveries when necessary. No price changes were announced by makers during the past seven days. Wholesalers' prices are also unchanged and continue to voice a weak tone.

Building and engineering contracts let during July in the Central West amounted to $149,971,800, according to the monthly review of F. W. Dodge Corp. This figure showed a drop of 22 per cent from the amount reported in the preceding month and a loss of 3 per cent from the amount reported in July of last year. This review showed 37 per cent of the July construction to be for residential work, 26 per cent for public works and utilities and 15 per cent for commercial buildings. The total volume of construction started in this territory during the past seven months showed a gain of 19 per cent over the same period of last year. Contemplated new work reported last month showed decreases of 24 per cent from both June of this year and July of last year.

Soil Pipe

Activity is not very brisk in the soil pipe market as far as new business is concerned, as most wholesalers ordered enough pipe at the low price period, late in June, to satisfy their needs for some time ahead. Manufacturers, however, are busy shipping pipe ordered at this time and the volume moving into wholesalers' hands is substantial. Distributors are experiencing a good call for pipe from contractors. Deliveries are going forward fairly promptly. Prices are firm and have not changed.

Steel Pipe

Demand for steel pipe continues to maintain a steady tone and the tonnage moving from mills from week to week shows little change. Plumbing and heating contractors, especially the latter, with the approach of the heating season, are using a good amount of pipe. Wholesalers' racks are not heavily laden, but early deliveries are possible from mills. Prices are firm and at the level established early in 1923.

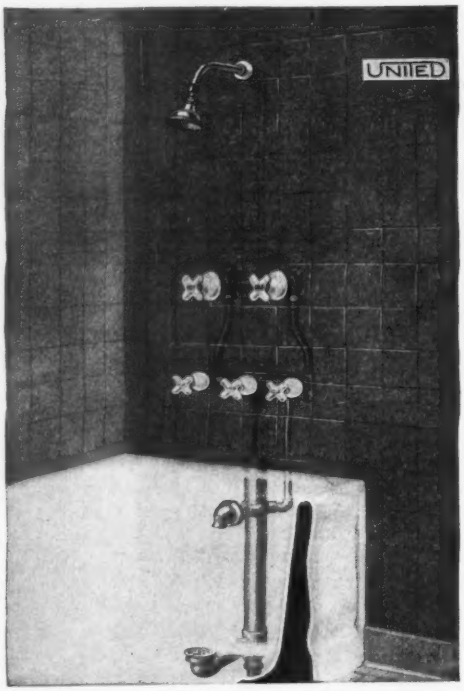
Wrought Iron Pipe

Mill shipments of wrought iron pipe are in good volume and, generally, represent definite consumption requirements of contractors. A fair volume, however, is also

LARGER ORDERS BECOME MORE NUMEROUS

THE completion of the first half of August finds the plumbing and heating materials market in a fairly strong position. While to the casual observer business shows little change from one week to another, manufacturers and wholesalers who make a practice of following conditions closely, state that it maintains its forward pace, which, if not particularly heavy, is nevertheless fairly steady. Reports from the various jobbing centers indicate that shipments are of good seasonal volume and, while in most instances slightly behind those of last year, are, on the whole, satisfactory. Conservatism, however, continues to be the keynote of business. Jobbers, while buying in slightly larger quantities than a month ago, have not abandoned their policy of close range buying, although most distributors, especially the larger ones, are more willing to cover on their definite requirements for 30 or 60 days ahead. Good activity is reported at nearly all points of manufacture and, with manufacturers' stocks at a high level, little or no complaint is heard in reference to extended deliveries. No new price sheets were issued by makers during the week.

July construction contracts in the territory east of the Rocky Mountains reached a total of $534,399,900, according to F. W. Dodge Corp. The territory comprised in this report includes about 91 per cent of the total construction volume of the country. This was an increase of 3 per cent over July of last year, but a decrease of 16 per cent from June, which holds the high record for all time. The total for the first seven months is 2 per cent higher than for the same period of last year.



UNITED Built-in Bath and Shower Fixture No. 322-A. Finest vitreous china handles and bell escutcheons, two part ball joint shower head, nickel plated top nozzle supply and standing waste.

MORE important than the most binding guarantee is the reputation a product earns through long and satisfactory service. It means a lot to plumbers and jobbers that it is almost never necessary to call on UNITED to make good its guarantee.

It's the assurance that the Red Metal Line is right, that when it is installed it will last long and function perfectly, with little or no occasion for servicing it, that has built the UNITED reputation - - -

THE UNITED-OBERNDORF CORP., CLEVELAND, OHIO

UNITED

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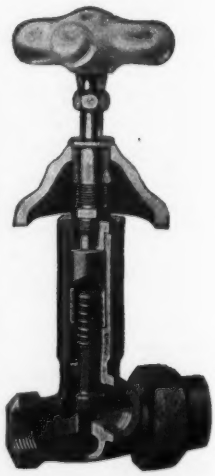

Shower Valve
No. 105-A

Not only the seat but every wearing part is easily removable from the front of the wall. Handle and escutcheon of vitreous china.

moving into jobbers' stocks for out-of-stock demands. Demand during the past week prevailed at about the same level as for the previous seven days. Mills are operating at a good rate and no delays are reported in shipments. Prices have not changed and are firm.

Enameled Ware

A fairly good demand prevailed for enameled ware during the past seven days, and little change is apparent from one week to another in the number of orders. There is, however, a tendency on the part of wholesalers to order in slightly larger quantities than heretofore in order to prepare their stocks for increased demands that are expected to arise within 30 or 60 days. Factories have ample and well assorted supplies and deliveries are being made promptly from that source. Prices have not changed.

Pottery

Representatives of manufacturers in this territory report the past week a fairly good one. Most makers have cleaned up all old business on their books and, as wholesalers gradually use up material in stock, makers are in receipt of a growing number of requests for staple items. Contractors' needs are naturally increasing with more and more buildings approaching the finishing stage and this is reflected on wholesalers and potters. Deliveries of staple items are being made without delay. Prices are firm and no changes have been announced.

Range Boilers

Demand for range boilers is confined, for the most part, to actual needs of contractors, as wholesalers are not buying above their actual requirements with the prevailing condition of prices and depending on manufacturers' warehouses for pick-ups when in immediate need of boilers. Ordinary consumption needs, however, are fairly good and the volume moving is in keeping with the season. Prices have not changed.

Plumbers' Brass Goods

A good seasonal demand maintains for both cast and tubular brass goods, according to manufacturers and wholesalers. Wholesalers appear to be ordering in slightly larger quantities than actually required for their current needs in order to be prepared for requirements that are definitely expected to arise in the near future. Jobbers, however, are not attempting to anticipate their requirements for any extended time in the future. Deliveries are being made promptly from manufacturing sources. Prices have not changed.

Boilers and Radiators

Although the heating season is approaching, new boiler and radiator business was not heavy during the past week, as most wholesalers had covered prior to the recent price advance. Ample stocks are available at manufacturing sources and no delays are encountered when early deliveries are desired. Prices are firm and have not changed.

NEW YORK

Close observers of real estate and building activity in Greater New York and outlying suburbs contend that the comparatively slight declines which are evident in some sections only mean the creation of greater stabilization in the real estate market. It is the opinion of many of these authorities that as quickly as a little greater absorption of homes already completed and under construction occurs, new ones will be projected, and the time set for this is early fall. These conclusions are reached, according to the published reports of brokers and operators, by the rate of occupancy now taking place and the small margin of supply over demand that exists at present.

However, some new work is constantly coming out and this, in conjunction with that which is being concluded, creates a continuous demand for plumbing and heating materials, some weeks in greater volume than others, but, nevertheless, the total makes a tonnage which is considered fairly good. Manufacturers generally appear to have stocks in hand ample enough to cover this demand as it is indicated, and, with production adequately keyed, there has been little or no complaint with reference to extended deliveries.

On the whole, quotations from manufacturers are considerably stiffer but that does not mean that weaknesses have entirely disappeared. This statement, though, can not be made with the same degree of emphasis when the resale prices of wholesalers are mentioned. Air valves were given an upward boost approximating seven and a half per cent during the week.

Soil Pipe

There is still little business being placed in this commodity at the existing base as the requirements of wholesalers are being taken care of by their placements made at the lower price level. Plumbing contractors are using quite a little soil pipe, causing the frequent re-establishment of inventories at their sources of supply. Prices are firm and unchanged. Deliveries are not curtailed.

Steel Pipe

Business consummated this week in steel pipe looks better where volume is concerned. This is due to the amounts used by plumbing and heating contractors, as the demands made by them are with but few exceptions reflected to the mills, the racks of distributors not being heavily laden. Makers are shipping promptly. Mill prices are steady and have not changed.

Wrought Iron Pipe

In keeping their stocks assorted and well balanced, jobbers forwarded some sizable orders during the past week. Mills, though, were in receipt of a less number of inquiries than have been reaching them during the past few weeks. Consumption is at a fairly good rate. Manufacturers' quotations are firm, but this cannot be said of resale prices in all instances. Deliveries are made promptly.

Enameled Ware

Stock maintenance by wholesalers, combined with the consistent demands of plumbing contractors, keeps a volume of enameled ware moving that is considered good. Production at the various factories averages well up, as some makers are beyond their normal capacities, while others are somewhat below. Manufacturers are well enough stocked with staples to give prompt delivery service. Prices are unchanged.

Pottery

Local offices of manufacturers have experienced a busy week responding to telephone inquiries. Shipments of pottery into this market were off a little during the past seven days in comparison to the fairly active demand which existed at the time of last week's survey. Manufacturers' warehouse and factory stocks of staples are such that little or no complaining is heard of tardy deliveries. Prices remain unchanged.

Plumbers' Brass Goods

Present activity in brass goods is about seasonally normal. The quantities of business taken by manufacturers vary from fair to good. Many buyers are marking time and committing themselves for both types of goods about as the stocks on their shelves are depleted by the needs of their trade. Most makers are in a position to render prompt delivery service. Prices, while not particularly strong, are unchanged.

Range Boilers

There is but a fair demand from plumbing contractors for range boilers. Wholesalers are buying about as they

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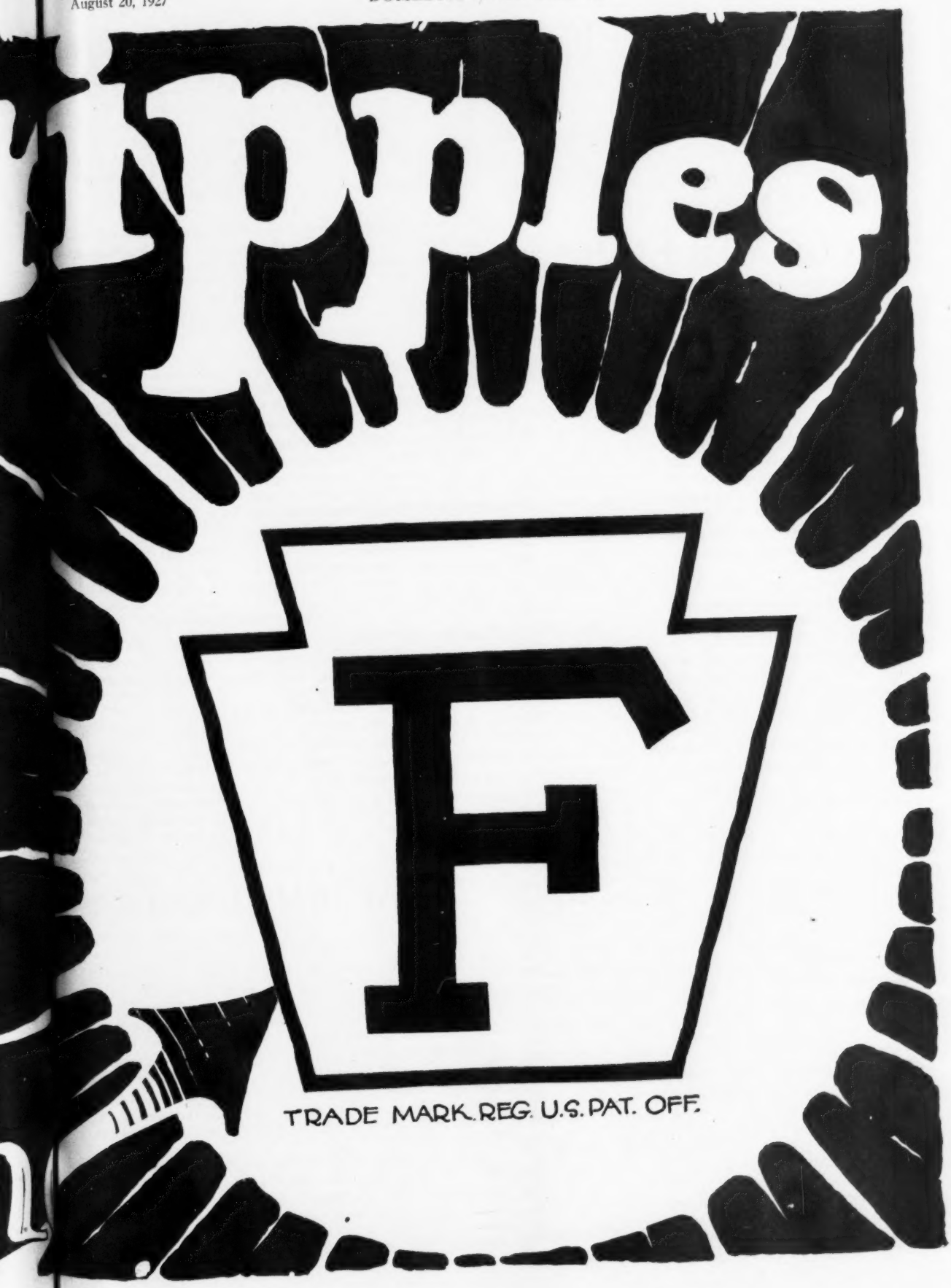
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find it necessary to bring their holdings up beyond the danger of shortage. Some manufacturers are not going after business with any degree of earnestness because of the prevailing low prices which, however, seem to be firm. Deliveries may be had promptly.

Boilers and Radiators

Manufacturers of heating materials are busy. Jobbers are coming into the market for increasing quantities of boilers and radiators as the needs of heating contractors are expanding. Prices remain unchanged. Shipments seem to be moving forward satisfactorily.

PHILADELPHIA

There are sections included in Metropolitan Philadelphia where building construction continues at an active clip, while in other parts a recession is noted. Activity centers seem, however, to be constantly changing. For a short period an intensive building program will obtain in a locality, then dwindle, only to be intensified in a nearby area for a time. On the whole, the operations which are accounting for the greater part of the building activity seem to be of the one and two family home variety with a wide scattering of multi-family dwellings, and while there are a goodly number of large buildings under way and still a great many more projected for the immediate future, they do not equal the numbers of last year. The increase in single and double family homes now being constructed is not great enough to offset the recession seen in the large down-town projects; as a consequence the 1927 program falls short of equaling that of 1926.

The above condition, together with the somewhat spurtive nature of activities, is reflected in the sales of plumbing and heating materials and gives tonnages shipped from week to week irregular volumes. Since the market survey of last week little change is seen in conditions. Profits are not large, collections are made with difficulty, and weaknesses in jobbers' quotations are not infrequent. Practically all trading is for immediate shipment with some few commitments for specified jobs. Prices are practically the same as they were last week with little or no deferments in shipping reported.

Soil Pipe

Prices are steady and unchanged. As yet little or nothing is heard of business at the present base as the commitments made by jobbers and entered by manufacturers at the lower prices have not been entirely completed. Foundries are in good production and retarded shipments are few. A fairly good amount of soil pipe is being used by plumbing contractors.

Steel Pipe

Demand on the wholesaler for steel pipe is holding up reasonably well and a fairly good tonnage is being moved in shipments composed of assorted sizes. The flow from mills corresponds almost identically in nature and in prompt forwardments, which would indicate well balanced stocks at the sources. It is generally conceded, however, that the buying movement of 1926 has not set in this year. Prices are unchanged.

Wrought Iron Pipe

A slight decline was seen in the demand for this commodity during the past seven days. Aside from this lessening of interest on the part of jobbers, no change is reported as far as wrought iron pipe is concerned. Because of the close buying of jobbers generally, any concerted demand by plumbing and heating contractors would soon be reflected to the mills. Deliveries are made promptly. No change has been made in prices.

Enameled Ware

The demand for enameled ware ranges from fair to quite good, but is for the most part spotty in that one day it is excellently brisk, then eases up considerably for several days only to step up again. All in all, the tonnage totals fairly well and the prospects for prolonged good consumption are encouraging in view of the building situation. Production is still in advance of requirements; consequently extension in deliveries occurs but seldom. Prices, while none too firm, remain unchanged.

Pottery

Wholesalers are carrying minimum stocks of staples but generally have sufficient pottery on order to replenish them on short notice, as manufacturers are in a position to ship promptly. Plumbing contractors are requiring increased quantities as the numbers of buildings reaching the fixture setting stage climb. No change has been announced in prices.

Plumbers' Brass Goods

Conditions in both the tubular and cast brass goods markets remain practically unchanged over the report of a week ago. Factories are in most every instance finding little or no difficulty in forwarding shipments satisfactorily to strengthen any weak spots appearing in the holdings of jobbers. The slightly increasing requirements of master plumbers are being cared for with equal celerity from the well assorted, if not heavy, stocks of their sources of supply. No further change has been made in prices.

Range Boilers

The range boiler market seems to be taking its time in finding itself under existing price conditions. Jobbers are buying as few boilers as possible, particularly the intermediate class of buyers, who are considerable in number—namely, those requiring a car about every three or four months. Consumption, however, seems to be upward and rapidly approaching a point where it may be classified as good. No price changes have been recorded. Manufacturers are delivering promptly.

Boilers and Radiators

Transactions in heating equipment have slowed up slightly, but not, according to reports from many manufacturers, alarmingly. Factories have well balanced surpluses and wholesalers are in position to give heating contractors boilers and radiators as they demand; but then most all business entered by both maker and jobber is for material to be set on specified jobs. Prices have not changed.

NEW ENGLAND

Demand for plumbing and heating materials in this territory has not increased to any extent during the past seven-day period, although volumes of manufacturers and wholesalers continue to improve, even if gradually, with each succeeding week. New construction, especially of the dwelling type, and the completing of developments begun several months ago are responsible for quickened turnovers of jobbers' stocks. Resulting good shipments from sources are generally reported, the nature of which are still characteristic of wholesalers' aversion to purchase in large amounts, there being, however, satisfaction expressed with the frequency with which repeat orders are placed.

Even though building figures do not total as high as last year, remodeling work is consuming a fair portion of plumbing and heating materials shipped into this section, and tends to offset whatever deficiencies exist in new developments. From the records of F. W. Dodge Corp., building and engineering contracts were awarded last

month to the amount of $31,148,600 in New England, which shows a depreciation of 13 per cent from June as well as a loss of 24 per cent from July of last year. An analysis shows that 44 per cent of this figure was for residential construction.

The average jobber has sufficient supplies on hand to meet his near-by requirements. Stocks at sources are also ample to accommodate whatever quick shipment requests come to their hands. Quotations on major commodities have undergone no changes since our last report.

Soil Pipe

Shipments from foundries are being made in quantities which are considered larger than during any period so far this year, a large portion of this activity being attributed to releases on contracts entered into with jobbers during the recent short lived low price period. Wholesalers are more particular in the up-keep of their stocks, and, in cases where old contracts have expired, they have returned to more or less conservative buying methods, asking quick deliveries when their stocks become depleted. In most all cases foundries are sufficiently equipped to grant these requests. No price changes were announced during the week.

Steel Pipe

No really active demand is experienced by distributors, but shipments from their warehouses are going forward to their trade regularly and in fairly satisfactory quantities. A note of optimism in near-future good business pervades reports from mill representatives as the outlook for a good heating season is brightening. Mill deliveries are prompt. Prices remain unchanged.

Wrought Iron Pipe

According to one mill representative, distributors' orders are of better volume than they have been in the past, but he further states that a large portion of this is made up of frequent withdrawals from his local warehouse. Jobbers' stocks are generally well balanced and in most cases are maintained at a point just ahead of the present needs of their trade. Ample supplies are available at sources. Prices are unchanged.

Enameled Ware

Continuing good demand is reported by makers, with moderate increases over the preceding week being enjoyed by several of those interviewed. Shipments from factories consist, in the main, of single carload lots, while pick-up business at local warehouses of manufacturers is exceptionally brisk. Wholesalers' stocks at this writing are generally well conditioned and evenly balanced, being reinforced on short notice from ample reserves in makers' hands. Prices have not changed.

Pottery

Demand for staple ware has not been heavy, although a slight step up in the volume of orders received during the last several days was noted by one or two potters. Most potters' sales are of satisfactory average in so far as their shipments of staples are augmented by continuing good movements into consumption of pieces of the better grade. The majority of wholesalers are not anticipating their future wants to any extent, but have on hand sufficient quantities of regular ware to enable them to offer quick delivery service. Prices are unchanged.

Plumbers' Brass Goods

While some jobbers continue to make placements covering their next 60 and 90 day wants, and others are still receiving material on contracts made heretofore, no unusual activity is noted by makers, for small-lot buying, with accompanying requests for quick shipments, is still popular. Stocks at factories and at jobbing points are ample and well assorted. Prices have not changed.

Range Boilers

Price reductions effected by makers during July have not brought about any considerable increases in volumes. Even though factory prices are at a low level, wholesalers have shown little tendency to largely increase their stocks, but are, nevertheless, adequately supplied to meet the existing demand. Makers are in position to ship promptly. Prices are unchanged.

Boilers and Radiators

Manufacturers of heating equipment are in accord that business since the first of the month has considerably increased and that, now entering the real heating season, extended activities should obtain throughout the remainder of the year. Makers' local warehouses and sources of supply have sufficient stocks to warrant quick deliveries. No price changes have been made.

PACIFIC COAST

While business on the Pacific Coast is more or less spasmodic, being better in some jobbing centers than in others, it is on the whole fair. Distributors generally are carrying minimum stocks and depending on the manufacturer to carry the bulk of the merchandise. Prices are more firm in some jobbing centers than in others, and sizeable inquiries are often marked by price concessions.

Soil Pipe

Demand continues to be mostly in small lots for immediate requirements, with very little forward buying being done. Distributors' stocks, while well assorted, are being kept at a minimum level. However, considering the fact that most of the soil pipe used on the Coast is received via the Panama Canal, most jobbers carry a 90-day stock; therefore, the trade's present requirements can be taken care of without difficulty. Prices to the trade for out-of-stock delivery were unchanged, with the exception of a slight advance in certain sections of Oregon.

Steel Pipe

Steel pipe continues to move in about the same volume as it has during the past few months. Considering the number of distributors of this commodity, the amount of business done by the individual distributor is fair. Distributors' prices for out-of-stock delivery remain unchanged and are more firm in some jobbing centers than in others.

Enameled Ware

While the demand for enameled ware is not as heavy as it was a year ago, the amount of ware being used on the Coast is of good volume, but divided between so many distributors that the individual distributor's sales do not correspond with the total volume moving into consumption. Wholesalers, generally, are continuing their policy of carrying only minimum stocks and depending on nearby factories for prompt replacement. Prices to the trade remain unchanged.

Pottery

Pottery continues to move in about the same volume as for some months past. Distributors have well assorted stocks and the trade's requirements can be promptly filled from stock. Jobbers' prices to the trade are based on present replacement costs and remain unchanged.

Plumbers' Brass Goods

Brass goods being consumed on the Coast is well up to what might be called a normal year. This commodity is not only being distributed by many different agencies, but is being manufactured here in greater quantity than the Coast itself can absorb, with the result that the individual sales are not large. Prices are unchanged.

Range Boilers

The range boiler market shows little change from week to week. Demand continues to be only moderate. Recent price reductions by manufacturers have not increased sales to any extent. Distributors are carrying only minimum stocks and depending on prompt replacements from factories.

The Stock Market

Quotations furnished by Frazier, Jelke & Co., Chicago

Par Value	1927 High	1927 Low	Quotations of August 15, 1927	*	Bid	Asked	Last
25	134⅜	110½	American Radiator Co., com.	A	128½	130	128¼
100	137¼	131½	American Radiator Co., pfd.	A	136	137	137¼
50	48½	41½	Anaconda Copper Mining Co.	A	45½	45¾	45¾
NP	38⅞	26	Brunswick-Balke-Collender Co.	A	30	30½	30½
NP	94	42	A. M. Byers Co., com.	A & F	76½	77¼	77
100	115	105⅜	A. M. Byers Co., pfd.	A & F	110½	110¾	110½
100	120	115½	Century Electric Co., com.	G	115	.....	116
100	*106*	*101*	*Century Electric Co., pfd.*	G	*100*	*103*	*101*
50	48½	9	*Chicago Nipple Mfg. Co., "A"*	B	.....	11	11
50	35½	4½	Chicago Nipple Mfg. Co., "B"	B	.....	6	6
25	52	47	Crane Company, com.	C	48	49	48
100	121	116½	Crane Company, pfd.	C	118	118½	118
100	95	84½	Detroit Brass & Malleable Works	D	90	95	95
20	30	26½	Eagle-Picher Lead Co.	I	26⅞	27	27
NP	43½	37¼	Fairbanks, Morse & Co., com.	A	38	38¾	38½
100	118	106	Fairbanks, Morse & Co., pfd.	A	107½	110	108
NP	*94½*	*60*	*Johns-Manville Corp.*	B	91	91¾	91½
100	161	100	Jones & Laughlin, com.	F	155	.....	155½
100	120¼	117	Jones & Laughlin, pfd.	F	120	121¾	120½
10	21	16	Michigan Copper & Brass Co.	D	19	20	20
100	115¼	95	National Lead Co., com.	A	107½	108	108
100	135	129½	National Lead Co., pfd.	A	131	.....	132
100	106	102	Ohio Brass Co., pfd.	H	105½	106¼	105½
NP	101	82	Ohio Brass Co., "B"	H	82	83	82¾
25	.....	.....	Pierce, B. & P. Mfg. Corp., com.	U	24	27	25
100	101	98	Pierce, B. & P. Mfg. Corp., pfd.	U	98	102	98
NP	*35⅞*	*21½*	*Richmond Radiator Co., com.*	B	*29½*	*30*	*29⅞*
NP	56	41½	Richmond Radiator Co., pfd.	B	44	44½	44⅝
100	65	53	Scovill Mfg. Co.	U	56	58	57
25	96	78	Standard San. Mfg. Co., com.	F	93	95	93
100	118¼	110	Standard San. Mfg. Co., pfd.	F	116	.....	116
100	.....	.....	Trenton Potteries Co., com.	U	45	55	45
100	.....	.....	Trenton Potteries Co., pfd.	U	95	105	95
100	244½	202	U. S. Cast Iron P. & F. Co., com.	A	212	215	213
100	118	112½	U. S. Cast Iron P. & F. Co., pfd.	A	115	116	115¾
NP	*42*	*38*	*U. S. Radiator Corp., com.*	D	*39*	*40*	*39¼*
100	112	95¾	U. S. Radiator Corp., pfd.	D	100	.....	100
100	65½	37¼	U. S. Rubber Co., com.	A	46	46¼	46
100	111⅜	85¾	U. S. Rubber Co. pfd.	A	94	94½	94½
100	138⅜	111⅜	U. S. Steel Corp., com.	A	134	134¼	134¼
100	133¾	129	U. S. Steel Corp., pfd.	A	133½	134	133¾
NP	27	17⅛	Walworth Company	A	17¼	17⅝	17½
NP	17	7	Williams Oil-O-Matic Htg. Corp.	C	8	8⅝	8¼
NP	7	4	Wolff Mfg. Corp.	C	4	4¾	4
NP	*97¼*	*60¼*	*Youngstown Sheet & Tube Co.*	A	*85⅛*	*85½*	*85½*

*Where listed—

A—New York Stock Exchange
B—New York Curb Exchange
C—Chicago Stock Exchange
D—Detroit Stock Exchange
E—Boston Stock Exchange
F—Pittsburgh Stock Exchange
G—St. Louis Stock Exchange
H—Cleveland Stock Exchange
I—Cincinnati Stock Exchange
U—Unlisted Stocks

The Metal Market

	Aug. 16	Average July, 1927	Average May, 1927	Average 1926
PIG IRON—				
No. 2 foundry, Chicago, Furnace	$19.50	$20.00	$20.00	$21.65
PLATES AND SHEETS—				
Steel boiler plates, Pittsburgh, per lb.	1.80c	1.80c	1.85c	1.89c
Blue annealed sheets, No. 10, Pittsburgh, per lb.	2.25c	2.25c	2.25c	2.40c
Black sheets, No. 24, Pittsburgh, per lb.	3.00c	3.00c	2.90c	3.17c
Straits tin	65½c			
COPPER—				
Prime Lake, f. o. b. refinery	13¼c			
Electro, delivered	13⅛c			
LEAD—				
Chicago	6.40c			

The Old Metal Market

Dealers' Buying Prices

	Per lb.		Per lb.
Aluminum clippings	19 c	Copper, light	9¼c
Block tin	*60½c*	*Copper, uncrucibled wire*	11 c
Brass, light	6¾c	Faucets and valves	9 c
Brass, yellow	7½c	Lead, heavy	6 c
Brass, red	9½c	Solder joints	10½c
Copper, crucible	11¼c		

NOTE. Prices are those quoted on Tuesday of this week.

FERD L. CRAMPTON CALLED BY DEATH

Ferd L. Crampton, one of the founders of the Crampton-Farley Brass Co., Kansas City, Mo., died recently of heart failure in that city. Mr. Crampton was active as president and manager of the company until a few weeks before his death.

APPOINTED EASTERN DISTRIBUTORS

R. T. Lawrence Company, 55 West 42nd street, New York City, has just been appointed eastern distributors for the Philip Haas Company of Dayton, Ohio, and New York City distributors for P. J. Flannery Company of New Britain, Conn.

WILL EXHIBIT AT ANNUAL MEETING OF AMERICAN PUBLIC HEALTH ASSOCIATION

The American Public Health Association will hold its fifty-sixth annual meeting at the Hotel Gibson, Cincinnati, Ohio, October 17 to 21, 1927. Among the concerns which have already secured exhibit space at the meeting are the *Chemical Toilet Corporation of Syracuse, N. Y.; Continental* Scale Works, Chicago; Frigidaire Corporation, Dayton, Ohio, and Wallace & Tiernan, Newark, N. J.

HEARD LECTURE ON PIPE THREADING AND SALESMANSHIP

The entire sales force of I. Greenbaum & Sons Co., New *York City, recently heard a lecture by Harold Thompson,* manager of the New York office of Oster Mfg. Co., Cleveland, Ohio. Mr. Thompson's talk, which centered around power pipe threading machines, included a discourse on the psychology of salesmanship, the facts of which he has gathered from many years of study and experience.

PLUMBING INDUSTRY WELL REPRESENTED IN AMERICAN MANAGEMENT ASSOCIATION

The plumbing industry is well represented in a group of forty-one leading business executives who have organized an advisory board of the American Management Association, feeling that improved management methods are essential in maintaining present prosperity and that knowledge of such methods should be spread more quickly throughout business.

H. C. Stockham, president, Stockham Pipe Fittings Co., Birmingham, Ala.; C. F. Dietz, president, Bridgeport Brass Co., Bridgeport, Conn., and Seth Marshall, president, Marshall-Wells Co., Duluth, Minn., are on the board.

Both production and distribution will be included in the scope of the board, which will serve in guiding the policies of the association and in focusing its increased research facilities on pressing industrial problems. Among the fields in which new management methods are now being developed and tested by the association and its members are those of labor efficiency and labor relations, financial control and budgeting, sales research and salesmen's training, office management and personnel administration.

Facts About Use of Ozone in Garages

There is a great deal of discussion going on these days in public health and engineering circles relative to the status of ozone in ventilation of schools, hotels, apartment and office buildings and its use in destroying carbon monoxide in garages.

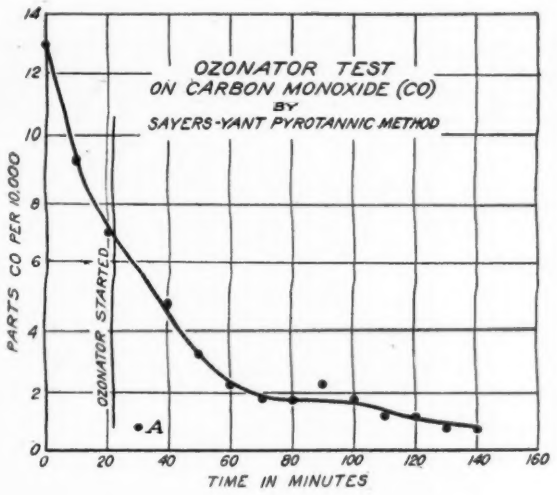
Carroll M. Salls, Ph. D., chemical engineer, is recognized as one of the authorities on this subject. His statement which appeared in the organ of the New York State Bureau of Industrial Hygiene, is as follows:

Ozone has been proposed as a remedy for the carbon monoxide hazard in commercial garages and service stations, the idea being to convert the carbon monoxide into the comparatively nontoxic carbon dioxide, by chemical reaction in the proportion of either 1:1 or 3:1.

Some of the proprietors and employes where ozone generators have been installed are enthusiastic about them. The men say they feel better and are less subject to the carbon monoxide headache. They apparently have more energy to go through with the day's work. It is said that there is less smoky haze in those rooms where the ozone machines are running.

On the other hand the cold facts of scientific evidence are decidedly against the use of ozone for this purpose. Since ozone machines are being installed, and since unwarranted dependence upon them might create a false sense of security to such a degree that windows and doors be tightly closed in cold weather, the New York Bureau of Industrial Hygiene was asked to conduct experiments on the use of ozone to destroy carbon monoxide.

A ten-cubic-meter gas chamber was fitted with glass tubes for withdrawing air samples and for conducting carbon monoxide into the chamber. An 18-inch circulating fan and a 1.92-gram per minute ozonator were placed in the chamber and connected so that both could be started or stopped without entering the chamber.



The chamber was closed and leakage of air around the door stopped as completely as possible. Then illuminating gas containing 30 per cent carbon monoxide was conducted into the chamber and mixed by means of the circulating fan until it contained about 13 parts carbon monoxide per 10,000 of air.

The supply of carbon monoxide was then stopped and air samples withdrawn at ten-minute intervals by means of a glass tube and a centrifugal air pump.

The air samples were analyzed by the Sayers-Yant pyrotanic acid method using a blood reagent made by diluting 6 c.c. of defibrinated steer's blood to 20 c.c. with saturated borax solution, then dilution to 120 c.c. with water.

How to Lose a Customer—

The most effective way of losing a customer is selling him something that's going to fall down in service. That goes for cellar drainers as well as anything else. Keep your customers not only well satisfied but in the mood to always consult you regarding other plumbing necessities, by selling them a Penberthy Cellar Drainer.

Full facts from your jobber

PENBERTHY INJECTOR COMPANY
Established 1886
1260 Holden Ave., Detroit, Mich.
Canadian Plant: Windsor, Ontario

Your jobber can supply you. Ask him now for full particulars and prices.

Penberthy
AUTOMATIC
CELLAR DRAINERS

GENUINE
ARMSTRONG

Service today and yesterday

In the old days, mistakes *and long delays were common.* But today Genuine Armstrong Pipe Tools are quickly available, thanks to the efficient nation-wide jobber system through which we operate.

Ask your jobber for Genuine Armstrong Pipe Tools

The Armstrong Mfg. Company
284 Knowlton St. Bridgeport, Conn.
New York Office: 181 Lafayette St.

When three samples had been withdrawn, the ozonator was started, and sampling continued at ten-minute intervals.

The results are shown by the curve in the chart. The first three tests show a constant slow reduction in the concentration of carbon monoxide due to leakage out of the gas chamber. If there were a prompt and appreciable reaction of ozone with carbon monoxide the curve would turn downward immediately after the ozonator was started, for there would be enough ozone discharged in the room in three minutes to react with all of the carbon monoxide in the chamber.

The first sample taken after the ozonator started was taken by mistake from the laboratory atmosphere outside of the gas chamber. The sampling tube had been accidentally disconnected. That sample indicated by point A in the chart contained no carbon monoxide, a result which indicated that the ozonator was perfectly efficient.

But the following sample contained 4.7 parts carbon monoxide per 10,000 of air; and the following eight samples taken over a period of eighty minutes all showed definite amounts of carbon monoxide, the actual concentration gradually decreasing because of diffusion from the gas chamber at the same rate as before starting the ozonator. It will be noted that the shape of the curve was not changed by starting the ozonator. The curve is not a straight line because increasingly large quantities of air are required to effect the same ratio of dilution as the concentration of carbon monoxide becomes smaller.

These results agree with Franklin's experiments, for Franklin showed that the reaction between ozone and carbon monoxide at room temperature is very slow, a period of more than three days being required for complete reaction.

To further confirm our results tests were made of the atmosphere in service stations where ozonators were in operation. As expected, appreciable amounts of carbon monoxide were found, and in two especially bad conditions amounts as high as three and four parts per 10,000 were found.

Even though carbon monoxide were promptly destroyed by ozone, a simple calculation shows that four ozonators would be required to destroy the carbon monoxide from each motor in operation. In this calculation every assumption is made that is favorable to the ozonator, i.e., the 3:1 combining proportion in which each atom of ozone is active; motor operating only two hours a day while ozonator is operating eight hours; 1.5 cubic feet carbon monoxide per minute per motor; and 1.92 grams ozone per minute from the ozonator.

Then again it is known that ozone is more poisonous than carbon monoxide. Even though the maximum recommended concentration of five parts per million of ozone were installed, that could not react with more than fifteen parts carbon monoxide; and it is well known that at least three times this quantity of carbon monoxide can easily be tolerated.

In view of these facts it is difficult to explain the very beneficial results reported by some employes and proprietors. The psychological effect of a preventative measure that they can see and smell may have something to do with it. If there is any real physiological effect of the ozone which balances the effect of the carbon monoxide within the human body, that effect is yet a mystery which future medical research must solve. Ozone has been recommended in the practice of medicine for a variety of ailments, achieving apparently a degree of success in some cases, and it is just possible that future research will show that ozone is a valuable treatment for carbon monoxide poisoning.

But from the practical viewpoint it is far better to re-

Dole VACUUM VALVE No. 2

THIS addition to the line of Dole Air Valves is timely and should be welcome. Timely, because The Trade will have an opportunity to earn nice profits this Fall. Welcome—not only because of the immediate earning prospect, but also because The Trade recognizes that there is a good market for a vacuum valve and appreciates Dole quality.

Scientifically designed vacuum valves, for example, Dole Vacuum Valves (No. 2) will work wonders when installed on a one-pipe job. A great saving in fuel is a leading feature (water boils at much lower temperatures in a vacuum). A new satisfaction in the heat-service will be observed—you'll have the smooth, uniformly and silent operation of hot water heat, together with the quick action of steam and the economy of a regular vacuum system.

SPECIAL OFFER

And of particular interest to The Trade is an attractive plan to introduce the Dole Vacuum Valve (No. 2). There is profit and prestige for you. Just drop us a line and we will tell you all about it.

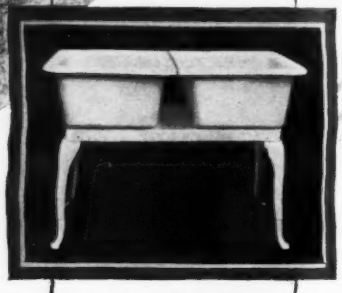
THE DOLE VALVE COMPANY 1913-1933 Carroll Avenue CHICAGO, ILLINOIS

PORCELIRON

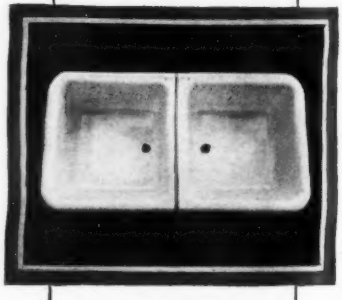
This trade mark denotes the highly specialized product of one of the oldest and largest porcelain enameling concerns in the country.

As the name suggests it combines all of the sanitary properties of a porcelain surface with the durability of a specially prepared sheet iron that forms the base.

Porceliron will not chip easily. It will not craze or scale. It is impervious to grease. It resists the action of household acids and alkalies. It can be kept perfectly clean with a damp cloth.



"Like two big White China Bowls"



Each compartment is deep drawn in one piece of heavy gauge enameling iron. There are no seams, cracks or joints inside the tub. All surfaces—inside and out, even under the rolled rim—are glistening snow-white Porceliron, the "perfect porcelain enamel."

Put This Booklet In Your Files

¶ You're going to need it. It means that the plumbing trade will make some real money on what, heretofore, has been something of a necessary evil—

¶ *LAUNDRY TRAYS*

¶ Yes sir—a staple changed to a business-getting Feature! Listen—

¶ The Porceliron Laundry Tray comes from the factory *boxed* as any convenient item of warehouse stock should be. *It can be handled, assembled and installed by one man.* It's as clean and sanitary as a china plate: It will last a lifetime with ordinary care; And the price—translate this into terms of dollars and cents yourself—

¶ The price is very little more than you'd expect to pay for a heavy, unwieldly, unsanitary affair of slate or stone.

¶ Master plumbers and jobbers who are looking for a live leader are going to get the details on this proposition and get them quick.

¶ A post card or a two cent stamp on a letter will bring the booklet and complete information to you. Shoot it out—today.

INGRAM-RICHARDSON MANUFACTURING CO.
200 Thirty-second Street, :: :: Beaver Falls, Pa.

Porceliron Factories at:

Beaver Falls, Pa. :: Frankfort, Ind. :: Bayonne, N. J.

move a poisonous gas by adequate ventilation than to depend upon the inhalation of another poisonous gas in the hope of bringing about a problematical physiological reaction.

In conclusion, therefore, it is recommended that when a positive test by the Sayers-Yant method is obtained, that the carbon monoxide hazard be eliminated by compliance with the letter of Code Rule 719 which is enforced as a part of the labor law in New York state.

Guy Nottingham, of Walnut Creek, Calif., has been appointed to fill the position of city plumbing inspector, caused by the resignation of Raymond Spencer. Mr. Spencer, who has held the position since its establishment, resigned because of other demands upon his time.

Canadian Plumbing Practice

(Continued from Page 45)

portion of such circuit system may be reduced to three (3) inches; otherwise the vent shall be extended to the full size to the main following the circuit-vent stack.

All circuit vent mains which are more than twenty-five (25) feet distant from the main stack shall extend through and above the roof of any building.

Where the discharge of any fixture on any floor or floors above such fixture shall exceed the area of the soil or waste pipe in connection therewith, and where there are six (6) fixtures on any circuit system, a special relief vent of not less than one-half the diameter of such branch soil pipe in connnection therewith shall be placed in front of the nearest fixture branch.

In any circuit or loop system, each relief vent pipe shall be placed after every six (6) fixtures in connection therewith; or, in case there shall be more than six (6) and less than twelve (12) fixtures in any row, the number of fixtures shall be divided

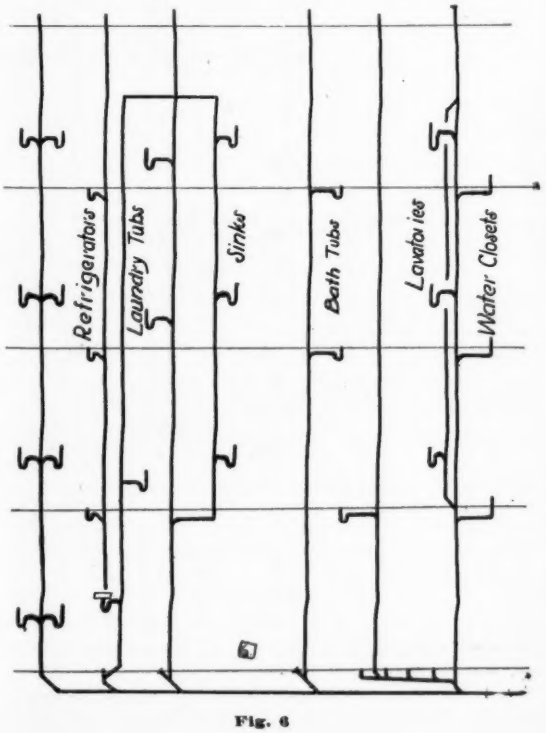
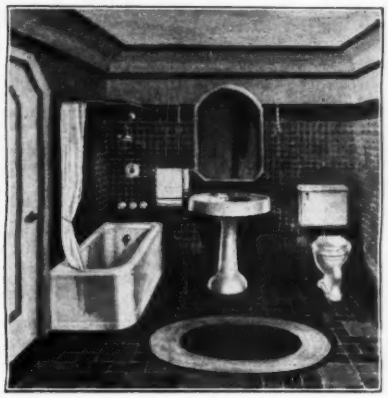


Fig. 6



The trend toward home beauty *is constantly growing*

Rundle designers never lose sight of this fact: that each Rundle piece is bought by the user, not as a single article, but as a unit which must contribute toward the beauty of some particular room.

Yet the beauty of Rundle designs has never been attained at the sacrifice of practical features. The primary consideration is satisfactory service—based on convenience, ease of cleaning and durability.

In addition, every piece is rigidly inspected for accuracy of fit to assure the dealer his just profit on every sale.

Investigate Rundle Ware now. Get established with this profitable line during the Fall building season. Write for catalog and name of your nearest jobber.

Rundle Mfg. Company
MILWAUKEE, WIS.

Southern Representative:
P. B. WALLACE
302 Sixth Ave., North,
Nashville, Tenn.

RUNDLE
PLUMBERS' SANITARY ENAMELED WARE

O-B Brass Valves

are made in the following styles:

Flexitite Disc Gate Valves	Radiator Valves
125 lb. Standard, Non Rising Stem, No. 20	*Flexitite Disc, Gate, No. 50*
125 lb. Standard Rising Stem, No. 21	*Steam, No. 30*
100 lb. Light Standard, No. 25	Hot Water, No. 40
	Packless Graduated, No. 35
	Union Elbows, No. 45

Globe, Angle and Check Valves

	Brass Disc	Renewable O-B Disc
150 lb. Standard	.....	No. 10
125 lb. Standard	No. 1	No. 15
100 lb. Light Standard	No. 1½	.....
Competition	No. 2	No. 3
Lock and Shield	No. 5	No. 5

Flexitite Disc Gate Valve Patented

OHIO BRASS COMPANY
Mansfield, Ohio

Ohio Brass Co.

KEWANEE

Water Heating Garbage Burners

Make Fuel of Garbage and Rubbish

The Hotstream HEATS IN A HURRY TRADE MARK REG. WATER-HEATER

KEROSENE HEATERS—WICK BURNER TYPE

Quadruple coils of copper and the patented Kerogas Burner (Hotstream is the only Water Heater licensed to use it) insure the greatest efficiency.

Lights instantly at the touch of a match —*is noiseless, sootless and extremely* economical.

Made in 3 sizes—write for complete information.

THE HOTSTREAM HEATER COMPANY
9502 Richmond Rd. *"Makers of Heaters that Heat"* Cleveland, Ohio

LOW PRESSURE **AEROFIN** 2 to 50 lbs. gauge steam Tube-Plate Construction

Whatever you've wished for in a Fan System Heating Surface you'll find in Aerofin!

Non-Corrosive—Compact—Lightweight
Encased Units, installed quickly and cheaply

Bulletins upon request to Aerofin Corporation, 750 Frelinghuysen Ave., Newark, N. J.

25 to 350 lbs. gauge steam Continuous Seamless Tubes HIGH PRESSURE **AEROFIN**

equally, and the relief vent shall be attached to a horizontal pipe between the same. No circuit branch shall extend in any case for more than twenty-five (25) feet without a relief vent being provided therein.

Separately vented waste connections may act as relief vents within the meaning of this section.

The vertical arm of any circuit or loop vent shall be taken off the top of the main branch in front of, or on the soil side of, such fixture used in connection therewith.

The vertical drop from the floor line of any water-*closet or slop-sink waste branch in any circuit sys*-tem shall not exced twenty-four (24) inches from the floor line thereof. The vertical arm of a circuit or loop system may receive the waste from not more than one (1) minor fixture, when such vertical arm is not less than three (3) inches in diameter; and from not more than two (2) minor fixtures when *such vertical arm is not less than four (4) inches* in diameter.

PLUMBING METHODS IN ONTARIO

THERE is a feature concerning four of the city ordinances of the province of Ontario that we do not just understand. In the printed codes of London, Ottawa, *Peterborough and Toronto, crown venting is expressly*

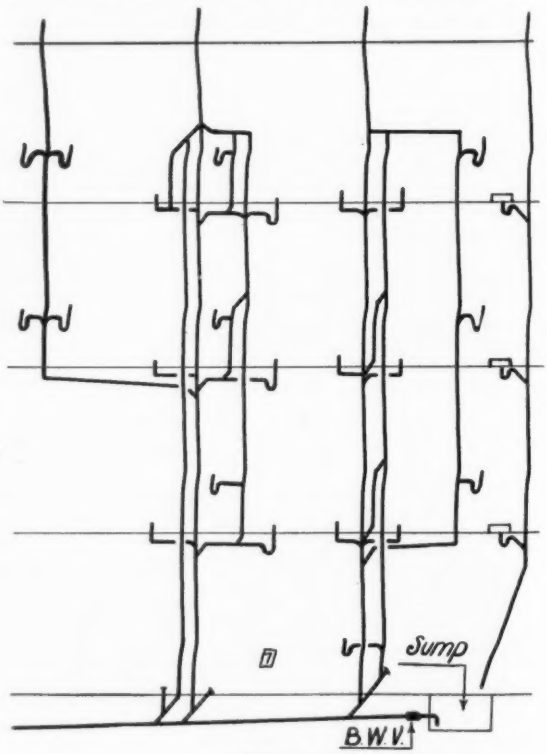


Fig. 7

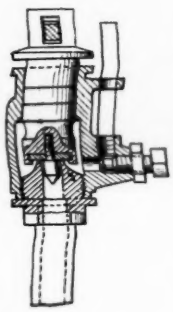
forbidden, and yet in each are shown illustrations of three methods of venting, all of which we would consider as crown venting. The three illustrations in question appear in Fig. 8.

We have written this article chiefly for the purpose of proving that there is no marked difference between Canadian plumbing practice and that of the United States, and we feel that we have proved our case.

In concluding the subject we want to point to one more thing.

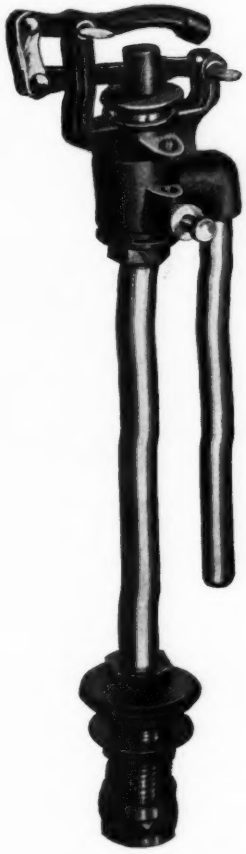
ANNOUNCING

The No. 75
"Silent" Ball Cock



As the plunger lowers to seat, the pin splits the water flow and eliminates any possibility of whistling. This reduces the pressure to such an extent that the closing off period is absolutely noiseless.

A regulator screw controls the flow of water through the refill tube and prevents any noise by retarded pressure.



The spiral located in the end of the husher tube reduces the pressure of rushing water and allows the tank to fill in a quiet and smooth manner.

Our Guarantee

By controlling the water pressure with the plunger pin, refill regulator and husher tube spiral, we guarantee this ball cock to work noiselessly under any water pressure.

THE INDIANA BRASS CO.

FRANKFORT, INDIANA

Mr. duPont has bought his 50th Oil-O-Matic

Chairman of the Board of the great General Motors organization uses oil exclusively for heat on his estate

TWO OF THE TENANT HOMES

On the duPont estate are large and small homes occupied by employees. Heating plants of various types. Yet all enjoy the same comforts. Oil-O-Matic can be connected to your present heating plant, whether it be steam, hot water or warm air.

JUST the bare statement that Pierre S. du Pont has 50 Oil-O-Matic Oil Burners on his estate, answers nine-tenths of the questions on oil heat now in your mind.

And when you read how he came to select Oil-O-Matic—where they are used—the length of time he has had them—and their record of performance—you will realize that your whole problem of heating is answered for you.

Engineer Makes Actual Tests

From his staff of engineers, Mr. Brewer was appointed to determine which oil burner was best fitted to provide economical, uniform, dependable heat. On the basis of engineering excellence, his choice narrowed down to two. But after making actual tests in homes on Longwood Farms, the duPont estate, Mr. Brewer enthusiastically, recommended Oil-O-Matic. He also bought two for his parents' home and father's greenhouse.

This settles the question of comparative merit.

For Any Size Home

Longwood Farms covers 1200 acres of beautifully rolling countryside, near Kennett Square, Pa. The employees and their families dwell on this estate in average size homes. It is into these that Mr. du Pont has placed fifty Oil-O-Matics.

This is your assurance that no home is too small to enjoy all the wonderful benefits of Oilomatic Heat.

R. P. BREWER
Engineer of maintenance, read an Oil-O-Matic advertisement in the Christian Science Monitor that prompted him to investigate the merits of Oil-O-Matic

Dependable Uniform Heat

The first three Oil-O-Matics were installed on the estate in the spring of 1925. So perfectly did they function that during that summer, 39 more were purchased. These 42 have more than confirmed the engineeer's judgment. Eight more have been added as new homes were completed.

In view of this there should be no question as to its dependability. Particularly since Oil-O-Matic has been giving similar satisfaction for 8 years, and more home owners are buying Oil-O-Matic than any other two oil burners combined!

Lowest Operating Cost

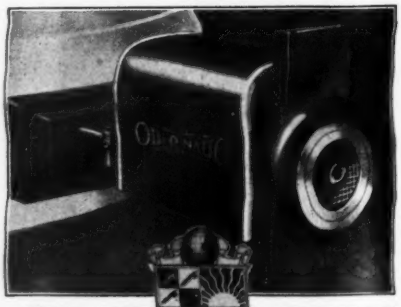
The individual tenants bear the cost of heating their own homes and their satisfaction is the best measure of Oilomatic Heat. You will find their homes spotlessly clean and easy to keep so. They enjoy the comfort of perfectly uniform, automatic heat at a cost equal to the bare cost of coal.

Oil-O-Matic's low operating cost is primarily due to its ability to use heavy oils, lower in price and richer in heat units than the light oils to which most oil burners are restricted. Yet Oil-O-Matic burns light or heavy oil with equal facility.

Write for Full Details

Everyone interested in heating should have all the data on Oil-O-Matic. Prospective dealers should write at once for our proposition. Some territory is still open.

All the advantages that had led more people to choose Oil-O-Matic than any other oil burner are well described in a new booklet beautifully illustrated in colors. When you read it you will appreciate why Oil-O-Matic today is the world leader by a margin of more than two to one. The coupon below brings it to you without obligation.



Williams Oil-O-Matic Heating Corp. Bloomington, Illinois

Please send me your dealer's proposition and literature. (D. E. 87)

Name .....

Street Address .....

City ..... State .....

WILLIAMS OIL-O-MATIC HEATING

In the first of our two tabulations, the last column is devoted to the subject of the legal regulation of plumbers and plumbing. Apparently the United States is considerably in advance of Canada in this respect, although we are far from being in an ideal situation.

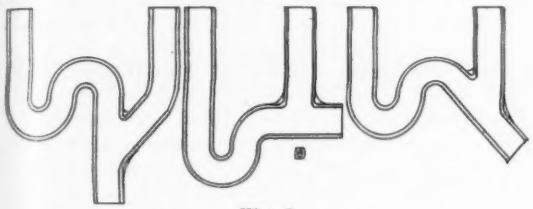


Fig. 8

When a city is properly protected in its plumbing regulations, both journeymen and master plumbers are obliged to pass a rigid examination. There are other cities which require nothing more than that a master plumber be registered as such. There are still others where there are no regulations whatever.

As a general thing we think it is a fact that the highest grade of plumbing practice is to be found in those cities that have the most rigid requirements, such as examination, etc.

This fact leads us to point out that for the most part the Canadian cities do not seem highly protected in this respect, and we feel that it is all the more remarkable that they nevertheless seem able to maintain a high standard of practice. We have no doubt, however, that more rigid legal regulations, the requiring of examinations, etc., will still further elevate plumbing practice, and that is what we are working for.

Health Aspects of Drinking Water

(Continued from Page 37)

ing and palatable, the worker will drink only sufficient quantities to assist nature in restoring the loss from the body.

THREE LARGE INSTALLATIONS

A BRIEF description of three large installations that I know of should be of interest.

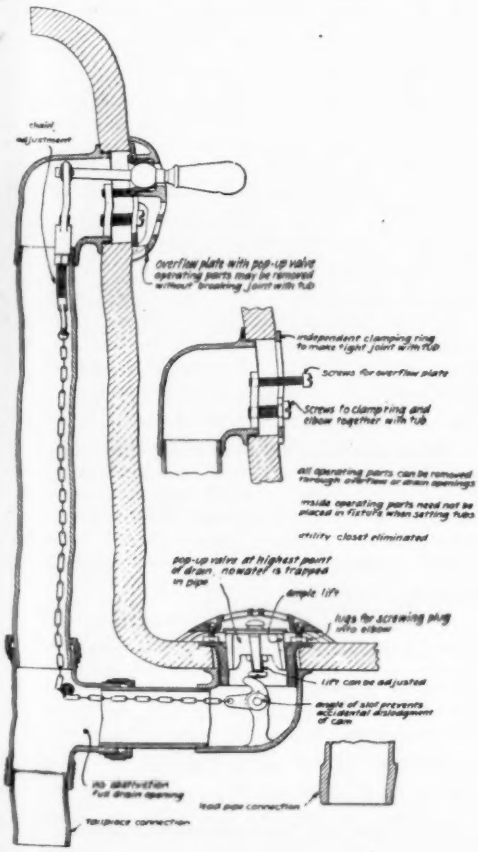
One large steel mill in the middle west employing 3,000 men installed a circulating system requiring 6 miles of properly sized and thoroughly insulated pipe. The water is cooled at one central point by a modern refrigerating unit consisting of pumps, compressors, condensers, open cooling tanks, and all under automatic thermostatic control.

The system handles 2,400 gallons of return water through a temperature range of 48 degrees to 37 degrees F. and 600 gallons of make-up water from 75 degrees to 37 degrees F. Records of tests made at this works on the return water show a maximum rise in temperature of 8 degrees, the average temperature at the dispensing bubble being 45 degrees F.

An engineer at the plant stated that the operating cost was approximately $1.00 per hour on the system, based on data collected for a period of four months.

On the entire system there are 100 sanitary hand-controlled stations at which a constant supply of cooled water can be had by the employes.

Another installation is somewhat larger and supplies


chain adjustment
overflow plate with pop-up valve operating parts may be removed without breaking joint with tub
independent clamping ring to make tight joint with tub
screws for overflow plate
screws to clamp ring and elbow together with tub
all operating parts can be removed through overflow or drain openings
inside operating parts need not be placed in fixture when setting tubs
utility closet eliminated
pop-up valve at highest point of drain, no water is trapped in pipe
ample lift
lugs for screwing plug into elbow
lift can be adjusted
angle of slot prevents accidental disengagement of cam
to lavatory or tub drain opening
lead pipe connection
tailpiece connection

AT LAST!!!

The Ideal Bath Waste Which You Have Long Wanted

NOTE THAT THIS HUDSON POP-UP BATH WASTE IS SANITARY—no contact of water in tub with greasy drains. STURDY yet SIMPLE in construction. EASY to install—TROUBLE-PROOF in operation.

Ask your jobber for quotation.

Patented Feb. 23, 1926

HUDSON BRASS WORKS INC.

BROOKLYN NEW YORK

Support the Stack!

THE "MEYER"
INSERTABLE JOINT

Patented April 20, 1926

The powerful set screws grip the pipe and "takes up the slack in the stack."

Costs No More

The ONLY insertable joint that supports the stack and holds the line at any height in the telescope hub.

Made Exclusively by

SOMERVILLE IRON WORKS

Warehouses and Sales Offices at

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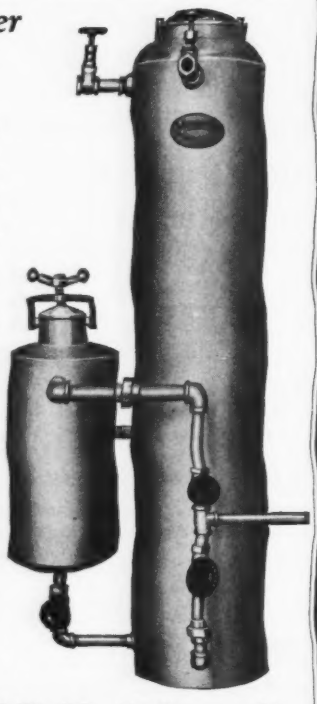
Chattanooga, Tenn. Chicago, Ill. Cleveland, O.
300 Madison Ave., New York, N. Y.

MURDOCK *Semi-Automatic Water Softener*

SIMPLE
DURABLE
DEPENDABLE

Improved and simplified design in this new Murdock Semi-Automatic Water Softener gives great convenience of regeneration and dependable operation. Produces clear, pure and odorless water usable for cooking and drinking as well as bathing and washing. Murdock products provide good plumbers with a strong, fast selling line — shallow and deep well water systems, condensation return and vacuum pumps, water softeners and air compressors. Write us now for complete information.



MURDOCK PUMP CO., Indianapolis

500 fixtures. It is said to be one of the largest in the United States. It is in use in a large automobile factory where production is an important factor. The system is centrally operated and of the closed type design. After water has been admitted from the city mains, it is run through filters and purifying equipment to the steel cooling tanks, five in number, each having 4,000 gallons capacity.

Each of these tanks contains 3,600 ft. of 1¼-inch galvanized refrigerating coils.

The cooled water is then distributed by pumps throughout the various buildings in well insulated piping. The plant has a maximum capacity of 5,700 gallons of cooled water per hour, or about 1/3 gallon per man per day at about 50 degrees F. Data of this kind will help to realize in a small degree the size of this demand.

The third installation is in a steel mill in the Pittsburgh district and consists of seventy-two individual, self-contained, unit type, fixtures in which the cooling takes place within the cabinet. The water is supplied to the user through sanitary spring-controlled bubblers. Each unit is equipped with thermostatic controlling devices to control the temperature.

Much more could be said regarding various types of cooling devices such as are used in large hotels to supply each room with desirable water.

Methods of refrigeration, types of equipment or types of the systems are not within the scope of this paper, for they all have merit and produce results in a measure, I hope, to meet the manufacturer's claims. What we sanitary engineers are concerned with here is the fundamental fact "that water too cold or too warm for satisfactory drinking purposes concerns the health of the people" just as much as does poorly installed plumbing.

WILL HOLD FIRST ANNUAL TRI-CITY OUTING

Master plumbers, supply men, journeyman plumbers and their families in the three cities, Davenport, Iowa; Rock Island and Moline, Ill., will hold their first annual all-day picnic at Credit Island, Davenport, Iowa, on Wednesday, August 24. All the plumbing establishments and supply houses in these cities will be closed all day on the day of the outing, and about 450 persons are expected to be in attendance.

NOW IN NEW LOCATION

The Heating and Sanitary Engineers' Association of Seattle, Wash., has moved its executive offices from 4129 Arcade building to 232 Securities building in that city, according to official notice just issued by Secretary J. N. Belanger.

St. Louis Auxiliary Has Boat Ride

Several hundred people, including members and friends of the Women's Auxiliary of St. Louis, Mo., spent the evening of August 10 on the large Steamer J. S., a pleasure boat on the Mississippi river. This is an annual affair of the St. Louis women and the money raised in this manner is given to charity.

Denver Auxiliary Holds Picnic

The Ladies' Auxiliary to the Master Plumbers' Association of Denver, Colo., recently gave a picnic at beautiful Elitch's Gardens. About thirty were present. After supper bunco was played and enjoyed by all. On August 11 the regular meeting was held at Washington Park Pavilion. Refreshments were served as a surprise by Mesdames Samson, Brickey and Bordeau. The next meeting will be held at the home of Mrs. V. A. Kiser, on Thursday, September 8.

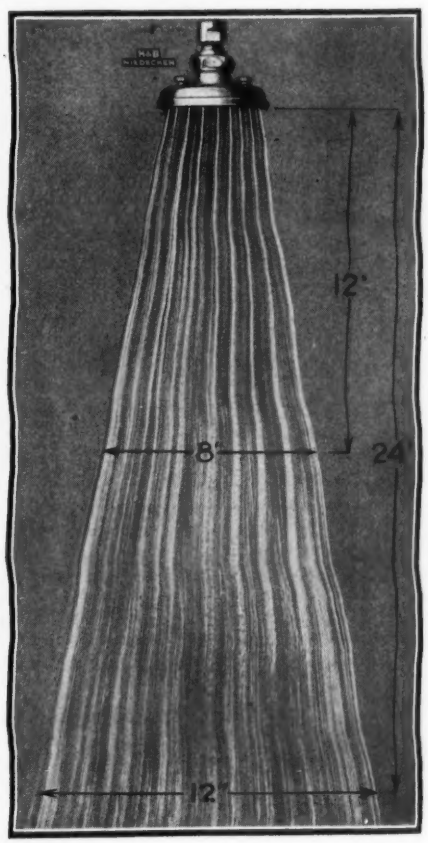
Announcing

THE

NIEDECKEN SHOWER HEAD

PATENTED U. S. A., GREAT BRITAIN, CANADA

A Niedecken Shower Equipment



Showers are frequently condemned because a proper flow of water cannot be obtained from the shower head on account of clogging of the spray holes in the face and the difficulty of *removing it for cleaning.* The face of the Niedecken Shower Head is easily and quickly removed for cleaning.

The face of the Niedecken Shower Head is drilled to use the smallest quantity of water, distributing it over an area equal to a five-inch shower head and many types of six-inch heads. The water used ranges from four to ten gallons per minute at pressures from twenty to sixty pounds.

The Shower Head is sold separately *only* for replacement of heads on showers *already installed*

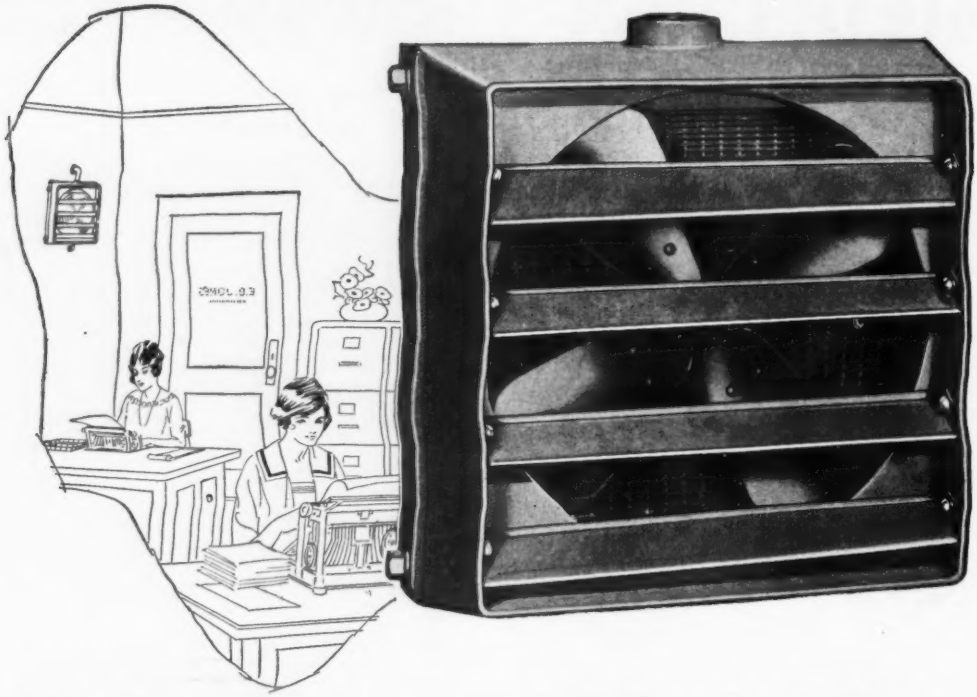
Write for Bulletin D. 10X

HOFFMANN & BILLINGS MFG. CO.

MANUFACTURERS SINCE 1855.

MILWAUKEE, U. S. A.

Keep Cool *with a* THERMODINE UNIT HEATER



Eminently successful for heating— Highly practical for ventilating!

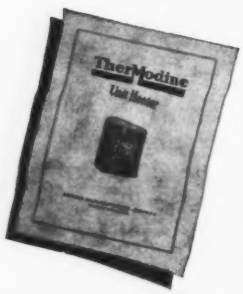
No longer need your heating equipment be of cold weather value only. The Thermodine Unit Heater, universally accepted as supreme among unit heaters, is now being widely used for ventilating. Simply turn on the switch and cooling begins immediately! Acts on the same principle as the ordinary electric fan. The motor driven fan of the Thermodine Unit Heater that diffuses heat throughout the room during the heating season, circulates and cools the air during the summer. No adjustments —no extra parts—simply turn it on. Vertical deflectors provide ideal breeze-direction. Thermodine Unit is easily installed.

Thermodine Unit Heater buyers are enthusiastic over this new use. Makes their heating equipment usable the entire year.

There is a Thermodine Unit Heater for every size space — from the largest factory building to the smallest office—waiting to give perfect heating satisfaction in winter and delightful ventilation in summer.

Write us today for complete information about the practicability of the Thermodine Unit Heater the year around.

MODINE MANUFACTURING CO.
Heating Division
1703 Racine St, RACINE, WIS.
Branch Offices in All Large Cities



This book gives you all the facts, advantages and many applications of the Thermodine Unit Heater.

10 outstanding features of Thermodine. Explains the universal directional advantage.

Interesting photographs showing *heat distribution by smoke tests.*

Illustrations showing construction, ease of installation and accessibility.

Complete capacity tables for this advanced copper condenser type unit heater.

THERMODINE UNIT HEATER

FOR STEAM OR HOT WATER HEATING SYSTEMS

ThermoDine

Sewage Disposal for the Home or Small Community

(Continued from Page 27)

The chemical storage tank may be had in several designs each of which is made as near rust-proof as possible by a coating of mineral enamel which is not easily affected by acids. One type of storage tank is made with a baffle plate and is self-draining.

It is also possible to obtain other styles which are drained through a 4-inch outlet at the bottom as shown in Fig. 2. To meet certain conditions where drainage is not possible, others are made which are pumped out through a manhole at the top. See Fig. 3. Practically all installations are equipped with a hand operated agitator as shown in the drawings. The purpose of this device is the stirring and mixing of the sewage with the chemicals, thereby producing more rapid action in breaking down and liquefying the sewage.

Multiple tanks for four or five toilets are obtainable. These larger units are provided with several agitators and one or more baffle plates. See Fig. 4. With proper care, ventilation may be efficiently accomplished as shown in Fig. 4.

Chemical storage tanks are made in various sizes depending on conditions to be met. In general, where a single bowl is used, the capacity ranges from 60 to 140 gallons and will accommodate families of from 4 to 12 people. The larger size would in all probability care for a school of 25 pupils. The still larger units for multiple bowls have correspondingly larger tanks. One company uses a capacity of 940 gallons on a 6 bowl outfit. The capacity is increased 125 gallons for each bowl when more than two are used.

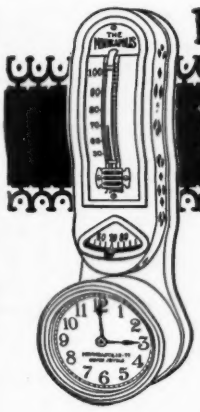
It may be said, as to care, that the addition of fresh chemicals and generous use of the mixing device or agitator is about all that is necessary with the self-draining installations. With others the contents of the storage tank must be emptied from time to time.

THE SEPTIC TANK

ONE of the most satisfactory methods of treating the sewage from the dwelling or small community is the septic tank. A septic tank is a reservoir or basin for receiving the raw wastes of the house sewer and so proportioned in its capacity that the sewage flow is retarded or slowed up allowing a portion of the suspended solids to settle out and be retained in the tank where it is attacked by bacteria and partly liquefied or turned into gas. The septic tank really performs two purposes; it settles out the solids and through bacterial action transforms a portion of these solids into liquid or gas. The overflow from the tank, known as effluent, is carried out in a line of sewer tile for further treatment in a filter bed or by other means which will later be described.

HOW THE SEPTIC TANK WORKS

IN ORDER to get a better understanding of the action of the septic tank, let us first consider the component parts of the sewage disposal plant. First, there are the house fixtures, among which might be mentioned the sinks, the lavatory, bathtub and stool, for collecting the various wastes of the household. Then there are the various drains and vents with which most all of our readers are very familiar, the vents leading to stacks through the roof and all of the drains terminating eventually in the main house sewer. This main sewer of iron or vitrified clay pipe runs with a gradual slope out under



Real Co-operation

The "MINNEAPOLIS" HEAT REGULATOR FOR COAL-GAS-OIL

Backed by Nation-Wide field organizations without equal in the industry.

Write for the Minneapolis proposition.

Minneapolis Heat Regulator Co.
Established 1885
2301 Fourth Ave., So. Minneapolis, Minn

American ANTI-SYPHON TRAP

No. 399

HEADQUARTERS

Full Cast Body
Ground Joint on Outlet

The Best

WE MAKE AN EXTENSIVE LINE

American Sanitary Mfg. Co.
ABINGDON, ILL.

Telephone: Lawndale 1850 - 1851

Ingot Brass

Smelters and Refiners

High Quality Metals

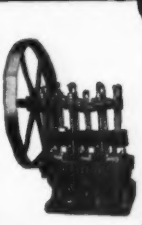
Metals made up to specifications.

R. LAVIN & SONS
2511-2525 W. 21st St.
John Hartman, Sales Mgr. Chicago, Ill.

Deming

WHERE pumping requirements demand large capacities and high pressures Deming "Triplex" Power Pumps can be depended upon for years of continuous service.

Deming "Triplex" Power Pumps are built in capacities up to 60,000 gallons per hour and are adapted to practically all pumping conditions where the vertical suction distance to the lowest water level does not exceed 25 feet. Complete information and catalog sent upon request.



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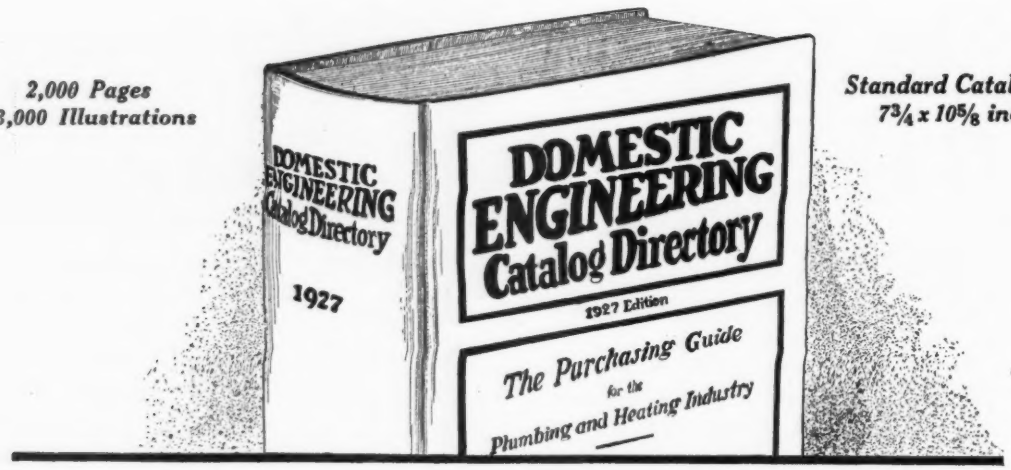
HAND AND POWER PUMPS

2,000 Pages
13,000 Illustrations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The Purchasing Guide for the Plumbing and Heating Industry

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How often are you called upon to locate the source of supply of some particular trade-named article or specialty with which you are not familiar? Instead of spending hours of time looking for it, or substituting some other brand, would it not be a great convenience *to open a book on your desk and locate it* instantly?

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This Directory is completely revised from cover to cover and a new edition brought out each year. Adequate facilities are available for gathering information on changes of address or firm names, locating new concerns, new products and specialties and eliminating discontinued items. A staff of trained experts is kept busy the year around, both inside and outside of our office, collecting data, checking up and verifying every item for each new edition.

In the 1927 edition 469 manufacturers show their condensed catalogs in the Catalog Section. Many articles you buy and handle right along are illustrated and described. Groupings of pages are made according to products which makes it much more *convenient for you to study lines and make* comparisons than to look up individual catalogs.

Here you have an up-to-date catalog file bound under one cover for your desk and completely indexed. There is no uncertainty about its reliability, as all the data is up to the minute.

Every article used in the industry, together with the trade name, is listed in the Directory section, comprising some 2000 headings. Among them are many new items and specialties never before listed in any directory. Following these listings is a comprehensive index with every article crossed under the various names by which it is generally known.

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As a reader of "Domestic Engineering" we want you to have a copy of this Directory for inspection and approval. We feel sure when you see the book you will desire to keep it. If for any reason you wish to return it after 30 days' free examination, you may do so without obligation.

Take advantage of this liberal offer and mail the coupon today!

Domestic Engineering Co.
1900 PRAIRIE AVENUE :: CHICAGO, ILL.

or through the basement wall and underground to the *septic tank which forms* the next unit where solid matter is settled out and liquefied. The liquid effluent from the tank is carried through a vitrified pipe to the third unit, which is usually a sand or gravel filter or some modification of it such as lines of agricultural drain tile laid in shallow trenches and surrounded with gravel.

WHAT TAKES PLACE IN THE SEPTIC TANK?

SEWAGE enters the septic tank containing some solid matter in actual chunks, some in finely divided particles and some in solution. The first action is the settling out of from 30 to 60 per cent of the solid matter which accumulates on the bottom. Here some of our useful *bacteria get* in their work. As explained they are naturally in the sewage and soon begin to multiply by the million. Some of the lighter solids rise to the surface and form a scum and this scum is added to by other substances which are freed by the decomposition taking place at the bottom. The so-called scum is a very important factor in the bacterial action as it excludes air.

The bacteria acting on the settled materials are known as anaerobic meaning that they work in absence of air

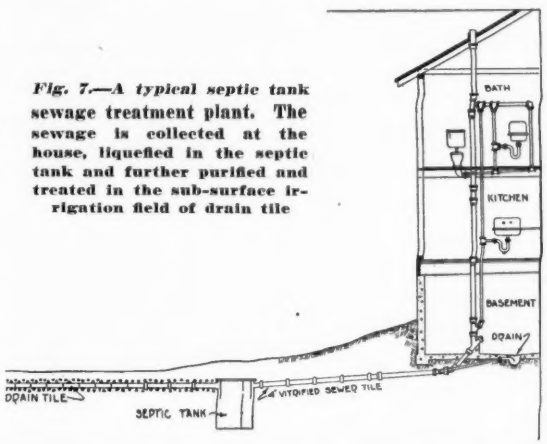


***Fig. 7.—A typical septic tank* sewage treatment plant. The sewage is collected at the house, liquefied in the septic tank and further purified and treated in the sub-surface irrigation field of drain tile**

for they soon consume any oxygen present in the fresh sewage. In watching the action of these settled solids, pieces may be seen to collect gas bubbles and rise to the surface where the gas may be given off and the particles fall to the bottom again. After a period of time the solid material which has entered in the raw sewage has been sufficiently acted upon that it has been decomposed and has been transformed into gases, liquids and sludge. Sludge accumulates in the bottom of any septic tank and it is that portion of the sewage which remains undigested. It eventually takes the form of a black earth-like sediment with little or no odor and must be removed at intervals of from one to three years or it would fill the compartments and prevent proper sedimentation. No septic tank will remove all the solid material from sewage. Few will remove more than half of the solids in suspension and no septic tank will digest all the sludge deposited in it. All tanks need occasional cleaning.

It is necessary at this time to correct a few misconceptions regarding the bacterial action just mentioned. It has been said that disease germs are all killed by the "friendly bacteria." We have no such assurance, however. It may be true that disease germs do not thrive in the septic tank but in all probabilities enough are discharged from the tank to render the effluent nearly as dangerous as the raw sewage. It has been said repeatedly that the effluent from the septic tank is as clear and pure as well water. Nothing could be farther from the truth. At

"They Keep a-Running"

½ Horse Power Century Type RS Repulsion-start Induction Single-phase Motor

Safe Operating Temperature

The safe operating temperature of Century Type RS Repulsion-start Induction Single-phase Motors is one point of *the difference* that contributes to their long life and makes them "Keep a-Running" indefinitely.

1. Temperature rise is not more than 40 degrees Centigrade in the hottest spot under constant full load operation.
2. This low temperature preserves the insulation, upon which the sustained operating life of the motor depends.
3. Well ventilated end brackets and symmetrical open spaces between field coil ends permit free circulation of air through and around all vital parts.

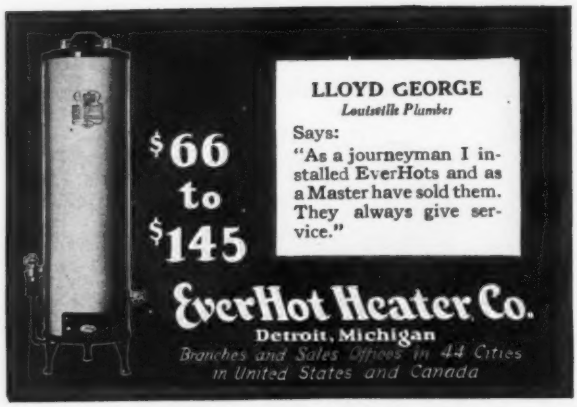
"Keep a-Running" ability plus high starting torque and low starting current makes Century Type RS Repulsion-start Induction Single-phase Motors particularly suitable for operating such apparatus as commercial and household refrigerators, deep well pumps, compressors, etc. Built in all standard sizes from ⅛ to 40 horse power.

There is a difference—use and specify Century Type RS Repulsion-start Induction Single-phase Motors

CENTURY ELECTRIC COMPANY
1806 Pine St. St. Louis, Mo.

32 Stock Points in the United States and More Than 50 Outside Thereof

⅛ to 40 H. P. Century MOTORS ⅛ to 40 H. P.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Louisville Plumber
Says:
"As a journeyman I installed EverHots and as a Master have sold them. They always give service."
$66 to $145
EverHot Heater Co.
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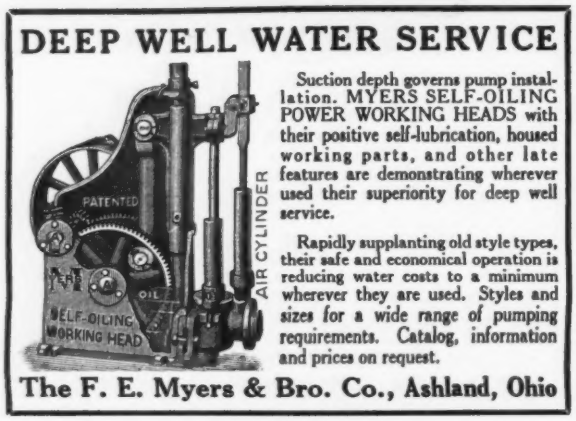
Branches and Sales Offices in 44 Cities in United States and Canada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Rapidly supplanting old style types, their safe and economical operation is reducing water costs to a minimum wherever they are used. Styles and sizes for a wide range of pumping requirements. Catalog, information and prices on request.
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SELF-OILING WORKING HEAD
AIR CYLINDER
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"THE HUSKY BABY"
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The ideal boiler stand to stock in quantities. Strong—will support two or three times the weight of any range boiler. Adjustable—takes 30 or 40-gallon tank. Compact—knocks down for storage and shipment—Profitable—Priced low and sells fast. What more could you ask? Jobbers—ask for prices.
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RICHMOND, VA.
A DEPENDABLE SOURCE OF SUPPLY

times it may be clear but it is never pure and must always be regarded as a source of danger unless properly taken care of. The process of purification is not complete within the septic tank. It performs only the first step, namely, that of settling out about one-half of the solids in suspension and liquefying them. This is a big step in the right direction but only the first step. After passing through the tank, further treatment is necessary to render the effluent comparatively harmless and inoffensive.

Before leaving this subject to discuss the other parts of the system, let us review briefly the conditions which make for good action in the tank.

1. Sewage must be able to enter from the house sewer without creating a disturbance in the first chamber. The sludge, if stirred up, may go over with the discharge in large chunks. The scum over the top should not be disturbed.

2. Between the scum and the sludge there must be ample room for sewage to stand while solid matter settles.

3. The tank must be so proportioned as to size that sewage will require about 24 hours to pass through it. Therefore, knowing the amount of sewage discharged from a house in 24 hours, we would know about what size septic tank to use.

4. The walls of the tank must be water-tight or heavy leakage might occur.

5. The sludge accumulations must be cleaned out from time to time, otherwise they eventually will fill the settling chamber.

6. There is no danger of freezing, and therefore the tank should be placed near the surface where possible, in a position that is accessible.

DISPOSAL OF EFFLUENT

THIS subject will be treated later in detail, but we think it advisable to present a general idea of it in this article. It has been proved without doubt that the effluent, as it comes from the septic tank, is not pure and that it contains countless bacteria, some of which may produce disease. It may look like pure water but when left exposed in pools, it will decompose giving off foul odors in summer.

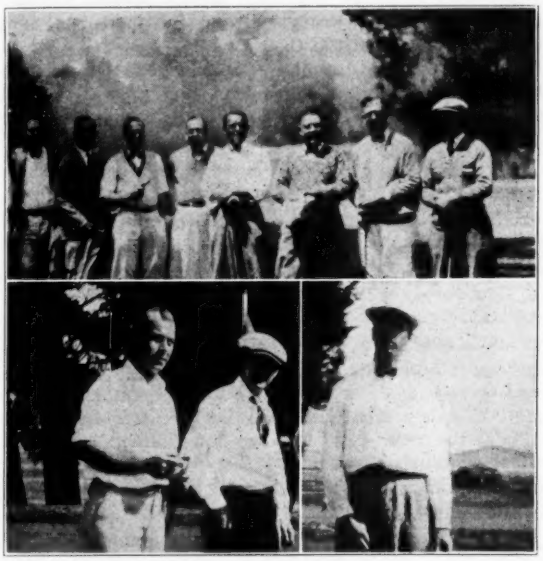
It will be remembered that in the septic tank, it was the anaerobic bacteria or those which work in the absence of air which helped to liquefy the sewage. Now we depend on a new kind which work in the presence of air to help us make the effluent harmless.

In the top layers of the soil there are countless millions of the aerobic bacteria or those which live and work in the presence of air. These convert waste matters into *harmless elements; they prevent the rotting or putre*faction of organic matter. These useful bacteria are most numerous in the top layers of soil and diminish rapidly in number below the first foot of depth.

Now in order to bring the effluent from the septic tank into contact with these bacteria, we must discharge it near the ground surface. One method of doing this is known as sub-surface irrigation. In this system the sewage is discharged into open jointed drain tile laid in shallow trenches and surrounded by porous material as sand or gravel. As the effluent seeps away through the earth, it leaves most of the solid material which it once contained on the soil particles as a thin film where it is attacked by various organisms which thrive under such conditions, and the result is the combining with the oxygen of the air with the organic matter and thus purifying it. This method of disposing of the effluent has the advantage that it places the effluent under ground where there is no chance of it giving off foul odors which will reach the residence.

In later articles we will describe in minute detail the

various forms of septic tanks which are now on the market and will give a complete description of all the various methods of disposing of the effluent from these tanks.



Top picture, left to right: Walter Mead, Hoffman Specialty Co.; R. D. Wolcott, and Bruce Cruickshank, both of Walworth California Co.; Volney Howard; Howard Finch, Kohler Co.; Frank J. Klimm, Master Plumber; Benjamin F. Blair, Standard Sanitary Mfg. Co., and William Rowe, of Anderson & Rowe.—Lower picture: Jackson Noble, Kohler Co.; Robert Allman, P. E. O'Hair & Co., and L. Barry, guest. Photos taken at the recent golf meet of the California Sanitation Development League, held at the Marin Golf and Country Club

LIVELY PLAY FEATURES C. S. D. L. GOLF TOURNAMENT

When the caravan bearing the golf section of the California Sanitation Development League and their friends left San Francisco on Friday morning, August 4, weather conditions were not favorable for playing the popular Scottish game, but when the seven autoloads had crossed the ferry and made their way up through Marin County to the course of the Marin Golf and Country Club, they found plenty of bright sunshine and ideal golf weather.

After a delicious luncheon served at the clubhouse, the members teed off at 1:15, and from then until well after five o'clock they learned considerable about the sand-traps and other hazards of this sporty course.

By the time all the holes had been played, the following outstanding scores were announced: Harold Marquis turned in a low net score of 65; Jackson Noble came through with a low gross of 88; and Curtis Gilley captured the bogie prize, his tally being 76. The guest prize went to L. Barry, with a low net of 77.

The complete scores were as follows:

	Gross	Hdp.	Net		Gross	Hdp.	Net
Lloyd Wilson	88	10	78	Lloyd Logsdon	115	30	85
Emil Heymans	117	30	87	M. Henderson	110	32	78
Jackson Noble	88	10	78	L. Barry	86	9	77
Robert Allman	103	19	84	Volney Howard	95	13	82
Howard Finch	93	17	76	Walter Mead	112	23	89
Wm. Anglebach	102	20	82	R. D. Wolcott	90	20	70
B. D. Cruickshank	105	22	83	B. F. Blair	109	27	82
William Rowe	118	31	87	Frank Klimm	98	24	74
Eugene Saul	111	20	91	Curtis Gilley	103	27	76
W. J. Monihan	93	26	67	Harold Marquis	98	33	65
Robert Lees	99	17	82				

At dinner in the club's commodious dining-room there were seats for everyone at an immense table arranged in the center of the room. When the dinner service had

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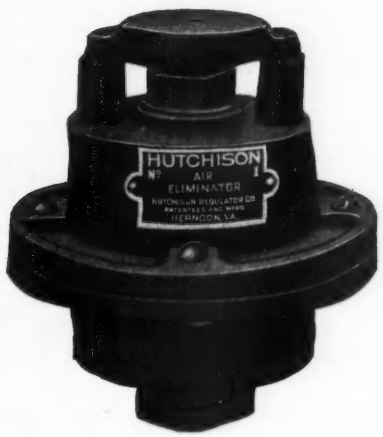
Vapor



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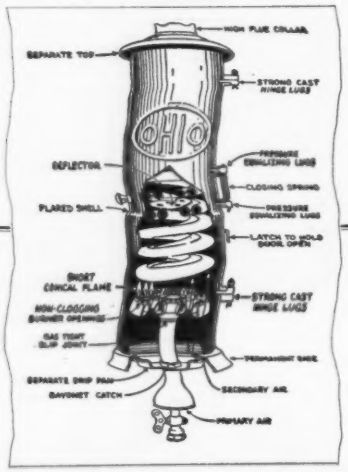

HERE IT IS—IN DETAIL

All of the reasons why Ohio Heater No. 25 is such a remarkable success are shown in the above illustration.

You'll find here many exclusive Ohio features—to be found in no other heater. Study this drawing and then write for fuller details.

The OHIO Heater Company, Columbus, Ohio

OHIO NO. 25 HEATER

been removed, Norman Farlow, chairman of the league's golf section, called for some informal remarks from Frank J. Klimm, president of the San Francisco board of health, *William J. Monihan, president of the Master Plumbers' Association of San Francisco, and Curtis Gilley, newly-elected president of the C. S. D. L.*

Before the party dispersed, Chairman Farlow announced that the next play would be held September 1, and that tentative plans were being made to hold the play on the course of the Sequoia Club, Oakland.

SOUTH BERGEN MASTER PLUMBERS HOLD SUCCESSFUL OUTING

The time and place of the outing at which the members of the South Bergen Master Plumbers' Association, Inc., of New Jersey were hosts were ideal: The time, because the day selected for the affair, August 6, proved to be *about as nice a day as has been experienced this summer, and the place, Klein's Grove at Oakland, N. J., certainly* was aptly named, as it truly is a delightful grove of tall pine trees on a rather high plateau in the midst of rolling hills at the foot of the Ramapo Mountains. The Ramapo River winding its way adds greatly to the scenic beauty of the spot and afforded the children and grownups a day of boating and swimming.

While the final preparations of the dinner, which was served out of doors, were being accomplished, soccer teams were chosen with a group of salesmen opposing an equal number of master plumbers. At least there were times when the numbers were equal and in this, as in the base-

Top picture: James E. Desmond and George L. Bird, president and secretary respectively of the New Jersey state association.—Middle picture: The committee in charge of arrangements; Fred Margelt, South Bergen president; William J. Wilson, chairman; M. W. Hobin, past South Bergen president; *A. J. Topp; C. H. Koster, secretary-treasurer of the South* Bergen association.—Bottom row: W. A. Henderson of Rutherford and his uncle, Robert Mills of Florida

ball game which was played after dinner, little attention was given to keeping score. The ball game, however, did have some semblance of regularity in that W. A. Henderson was chosen as umpire and the verdict of this astute Rutherford master plumber stood, regardless of the bantering disputes that some of his decisions seemed to create. The only known fact about the game at its conclusion was that the total scores of each side were very large.

James E. Desmond, president of the New Jersey State Association, accompanied by George L. Bird, state secretary, arrived in time for supper. When introduced by William J. Wilson, chairman of the committee appointed to make arrangements for the outing, Mr. Desmond expressed to the 200 picnickers gathered his delight at finding the women and children present because they add so much to the enjoyment of affairs of this kind.

Mr. Wilson was aided in making the plans for the outing by local President Fred Margeit, Secretary M. W. Hobin, A. Topp and C. Koster.

After supper the committee conducted a contest and distributed a number of articles which were presented to the association by some of the manufacturers and wholesalers. Among the fortunate recipients of these prizes were E. F. Margeit and James Furno, who each got a half gross of hacksaw blades. Stanton T. Lawrence was awarded a 24-inch wrench, while L. Weigele received an 18-inch one. Two cans of boiler liquid and two boxes of air valves went to W. A. Henderson, Miss Naomi Lawrence, James Girardi and Allan Blair, respectively. Stocks and dies went to Mrs. Fred Margeit, while a bench vise was carried off by Stephen J. Dinino. A rotary saw set was won by Fred Margeit. All the ladies present were made happy by boxes of candy after both meals. These were gifts from the South Bergen organization, whose membership is drawn from North Arlington, Lyndhurst, Rutherford, Carlstadt, East Rutherford, Woodridge, Moonachie and Hasbrouck Heights, all New Jersey townships within close proximity of one another.

G. H. Sutherland Called by Death

G. H. Sutherland, president of the G. H. Sutherland Plumbing & Heating Co. of Walla Walla, Wash., died suddenly, July 27, at his home, of a heart attack. Although he had suffered similar attacks occasionally, his condition had not been such as to alarm either himself or friends, and he was actively engaged in his regular business affairs up to the day of his death. Mr. Sutherland had been in the plumbing business in Walla Walla for 44 years and had been connected with the plumbing industry for 53 years. He was born in St. Joseph, Mich., March 16, 1858. When he was about two years of age his parents moved to Oakland, Calif., but the family later returned to Michigan. However, when he was sixteen years he returned to Oakland and became connected with the Oakland Plumbing Co. as an apprentice. In 1880 he struck out for the Pacific northwest, locating for a time at Colfax, Wash. In a few months he went to Walla Walla as superintendent of the Walla Walla Gas Co. In 1883 he entered business for himself under the firm which bears his name. This business prospered under his untiring efforts and has come to be known as one of the leading plumbing and heating firms in a wide territory, maintaining business standards that were a credit to the industry.

In 1906 the Electric Supply & Fixture Co. was incorporated and Mr. Sutherland became its vice-president, a position which he continued to hold until his death. This establishment adjoined the headquarters of his plumbing business. Surviving him are his widow and two grown children, Louis C. and Lida. The oldest son, Ray, lost his life by drowning a number of years ago.

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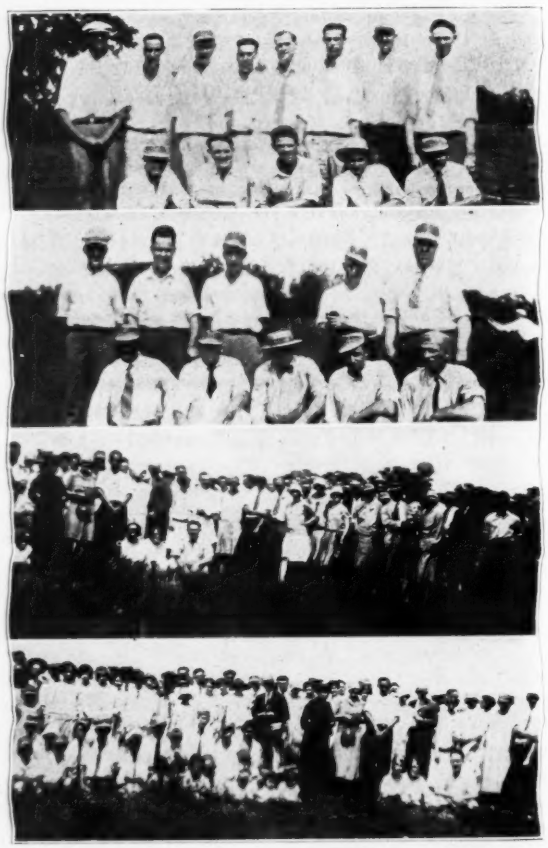
NORFOLK ASSOCIATION PICNICS AT JAMESTOWN

The Norfolk association held its annual outing Saturday, August 6, and all gathered early in the morning to take the delightful boat trip down the James River to Jamestown, Va. A special boat had been chartered and E. G. Byrd, secretary of the association, was on hand early with the committee to greet the masters and their families. A jazz orchestra had been provided, and dancing, music and singing was enjoyed by all during the trip down.

Upon arrival, the various races were run off and proved exciting. The big event was the ball game between the wholesalers and master plumbers in which the wholesalers



Top picture: The victorious baseball team of the salesmen. Second picture: The vanquished master plumbers' baseball team.—Third and fourth pictures: Groups of those who attended the outing.—Photos taken at the annual outing of the Norfolk association held at Jamestown, Va.

finally won, 5-4. The pitching of Macon and the batting of Cramer and Scott proved too much for the masters, although the pitching of Coley was also good. Duell featured with his fielding and Stell with his batting, the feature batting being accomplished by Bennett who knocked a home run.

B. Y. Kinsey, secretary of the Richmond association, drove down and enjoyed the games. At 4:15 the whistle blew and all gathered on board the boat to dance again on the homeward trip.

A. F. Bellingrath of Decatur, Ga., for many years well known for his activities in association affairs in his part of the country, has been confined to his home since June 1 suffering from an overworked heart. It is feared that he will be compelled to stay at home for several months.

THIS WEEK

AMONG MANUFACTURERS, WHOLESALERS AND THEIR SALESMEN

TOMLINSON CO. MOVES MAIN OFFICE

It was recently announced that the main office of Tomlinson Co. has been removed from 142 North Seventh street, Philadelphia, Pa., to the concern's new store and warehouse at 3650 North Tenth street, in that city. The North Seventh street establishment has not been discontinued and display rooms are maintained at both addresses.

OPENS BRANCH IN TULSA, OKLA.

The Hoffman Heater Company of Louisville, Ky., has opened a branch office and warehouse in Tulsa, Okla., in charge of Barney McConnell. This new branch will cover the state of Oklahoma and part of southern Kansas and western Missouri.

OPENS OFFICE IN NEW YORK CITY

The Earle Gear & Machine Co., with main office and plant at 4707-4715 Stenton avenue, Philadelphia, has opened a district office at 95 Liberty street, New York City, in charge of C. N. Walsh and George E. Barrett.

APPOINTED PACIFIC NORTHWEST REPRESENTATIVES

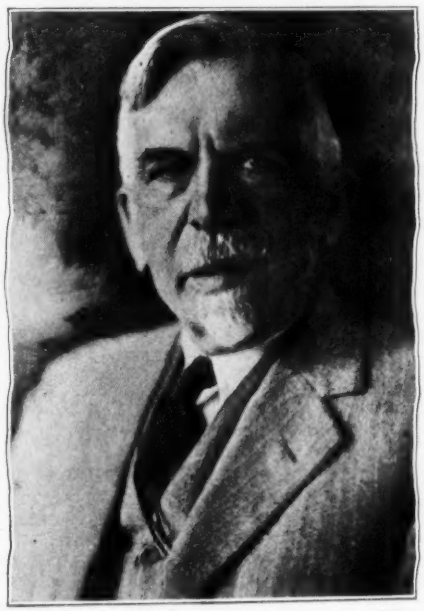
J. B. Wise, Inc., Watertown, N. Y., has just announced the appointment of James A. Riordan Co., Inc., as its Pacific Northwest representatives with headquarters in the L. C. Smith building at Seattle, Wash.

MERGING BOILER AND RADIATOR COMPANIES SHOW UNUSUAL PRODUCTION INCREASES

Interesting figures, recently announced by the newly formed National Radiator Corp., show that within the last four years the constituent companies which make radiators increased production 73.2 per cent as compared with a gain of 14.6 per cent for the industry as a whole. These gains are measured in terms of square feet of radiation surface. In the production of boilers, measured in pounds of iron used, the companies increased production 35.6 per cent, while the industry showed an increase of 16 per cent, according to the announcement.

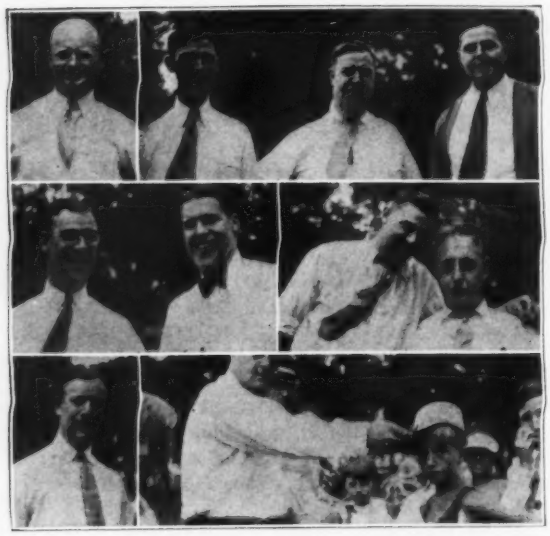
The products of the corporation will include radiators of all standard sizes and types; cast-iron boilers, both round and sectional, for burning hard coal, soft coal, coke, oil and gas; and hot-water supply boilers. Aside from the plants mentioned in last week's issue, the corporation maintains warehouses and branch offices at New York City, Boston, Philadelphia, Chicago, Cleveland, Pittsburgh, Baltimore, Cincinnati, Richmond, Va., Washington, D. C., and a number of other cities in the East and Middle West. Ultimately the coalition plans to go into the export market,

Executives of the New Boiler and Radiator Merger



John H. Waters
Chairman, National Radiator Corp.

Edward Norris
President, National Radiator Corp.



Top row: Fred Lapworth, Ray Nentwig, Fred Finn and Stuart Kelly, all Murray W. Sales & Co. salesmen.—Middle row: Frank P. Murphy, manufacturer's representative of Cleveland, Ohio; J. B. Sullivan of the Detroit Brass & Malleable Works; A. Wolff and T. Mann, both of Murray W. Sales & Co.—Bottom row: A. Kivel, salesman for Murray W. Sales & Co.; Joseph Stewart of the Republic Brass Co., dispensing baseball caps to the children.—Photos taken at the recent outing of the Murray W. Sales & Co., Detroit, Mich.

as all its plants have easy access to shipping facilities.

John H. Waters, chairman of the board of directors of the corporation, says that the organization will maintain the same policies of manufacture and distribution as the constituent companies did, and the management of the old companies will have substantial interests in the new organization. Until the problems of co-ordination are fully worked out, it is expected that the former companies will operate largely as in the past, as separate units, according to the announcement. Plans for consolidation of the sales facilities in various cities will proceed only after a study of the personal and trade problems involved.

A short summary of the histories of the companies involved in the merger shows that a number of them have been engaged in the business for a long time. The Gurney Heater Mfg. Co. originally started in Canada, later establishing a plant in Framingham, Mass. The merger includes only the plant on this side of the border, the company continuing to maintain its Canadian properties. This company manufactured radiation. The Niagara Radiator & Boiler Co. incorporated about thirty years ago, and E. C. Andrews became president about twenty years ago. The company had plants at North Tonawanda, N. Y., and at Chicago and manufactured round and sectional boilers and radiation. The Continental Heater Corp., Dunkirk, N. Y., was started fifteen years ago by John W. Watson and E. C. Reed, who have continued as the dominant factors in the company. It manufactured boilers and radiators. The Union Radiator Co., Johnstown, Pa., had been operating for twenty-two years under the active management of Herman E. Baumer, and manufactured radiation. The Utica Heater Co., Utica, N. Y., was founded in 1882, and since 1911 has been under the management of Edward Norris, who is president of the new corporation. It manufactured boilers and warm-air heating systems. The National Radiator Co., Johnstown, Pa., is an outgrowth of the old Fowler Radiator & Mfg. Co., established at Norristown, Pa., in 1894. John H. Waters and his brother, Samuel B. Waters, became interested, and in 1896 assumed control of its policies, moving the plant to Johnstown on account of the proximity to raw materials. In 1911 a plant was opened at Trenton, N. J., and in 1918 the company purchased the plant of the Federal Radiator Co., New Castle, Pa., and later built an addition.

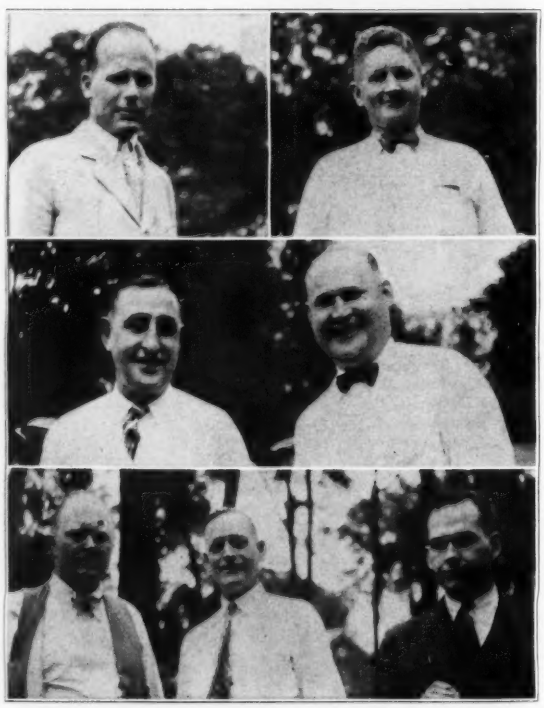
MURRAY W. SALES & CO. HOLD SUCCESSFUL OUTING

Murray W. Sales & Co., Detroit, Mich., held their annual outing for their employees on Saturday, August 6, at Woodland Beach, which is about 30 miles from Detroit on Lake Erie. The party went by autos, leaving the Murray W. Sales main office about 9:00 a. m. with Jeff Creegan leading the way. After a pleasant drive the party arrived about 11:00 a. m.

About 12:30 family baskets were opened, and everybody enjoyed a good dinner. After the dinner the athletic events were started, such as swimming, ladies' ball throwing, fat men's race, children's races, tug-of-war, and many other events. However, the outstanding feature of the afternoon was the ball game between the shop men and office and salesmen, which was won by a score of 3 to 2 in favor of the shop men, as they finally won out in the last inning through an overthrow by Fred Lapworth, who was pitching for the office and salesmen. Jos. Stewart, of the Republic Brass Co., umpired the game. Morley Brown was the official scorer. Music was also furnished during the game by the Woodland Beach orchestra under the direction of Henry J. Choiniere, a Detroit master plumber.

After the ball game the orchestra adjourned to the ball room of the Woodland Beach Club and everyone enjoyed some good music and dancing.

Carter Sales, general manager of Murray W. Sales & Co., arrived about noon in his fast Cris-Craft speed boat and took moving pictures of the picnic.



Top row: Carter Sales, vice president and G. Brennan, manager of the East Side branch.—Middle row: Ty Tifft, assistant purchasing agent and Jeff Creegan, assistant sales manager.—Bottom row: Morley Brown, purchasing agent; A. Daniel, sales manager; H. Bills of the A. M. Byers Co.—Photos taken at the recent outing of the Murray W. Sales & Co., Detroit, Mich.

Personal Mention

C. A. Dunham, president of the C. A. Dunham Co., Chicago, has been appointed by the National Association of Manufacturers as one of ten leading industrial and business men of Illinois to represent the State of Illinois on the platform of the American Industry Committee of One Hundred, which will draw up national planks to be submitted to both the Republican and the Democratic parties at their conventions in the summer of 1928.

O. P. Simler

O. P. Simler, formerly vice president and general sales manager of the Hoffman Heater Co. of Louisville, Ky., has joined the executive staff of the Cleveland Gas Burner & Appliance Co. of Cleveland, Ohio, as general sales manager, according to an announcement just issued by **Harry E. Kerr,** president of the latter concern. Mr. Simler has been identified with the heating trade for the past twenty-seven years, and has during recent years specialized on the hot-water heater business, a fact which has given him a vast amount of experience that will be of great value to him in the gas burner field.

Charles A. Lippy, of Scioto Valley Supply Co., Columbus, Ohio, has just returned from a fishing trip at Georgian Bay, Canada. Included in the party with Mr. Lippy were H. J. Harte, T. J. Norton, A. J. Keohe, and W. T. Jameson. Ten days of excellent fishing were enjoyed with the result that each man was well rewarded for his efforts.

Frank Sutcliffe, general manager of John Wood Mfg. Co., Conshohocken, Pa., recently returned from a seven weeks' trip to the Pacific Coast. Mr. Sutcliffe returned to the east via the Canadian Rockies, thus deriving a little pleasure from his business trip.

Raymond H. Smith, of Northampton, Mass., who formerly was sales manager of the Haydenville Co., has recently affiliated himself with the American Pin Division of the Scovill Mfg. Co., Waterbury, Conn. Mr. Smith will cover New York state exclusive of New York City.

Paul R. Powell has been made manager of the Crampton-Farley Brass Co., Kansas City, Mo., to succeed the late F. L. Crampton. He has been connected with the company for the past eight years.

E. C. Harbordt, assistant general manager of the U. S. Supply Co., Kansas City, Mo., left August 13 for an extended vacation trip which will include a cruise of the Great Lakes and a fishing trip in Northern Minnesota.

G. Nesheim has been appointed manager of the Oakland, Calif., branch of Walworth California Company, succeeding Lloyd Jensen who has resigned. **Robert D. Wolcott,** formerly manager of the engineering department of Walworth California Company, has been appointed assistant to the manager of the Pacific division of the Walworth Company. **E. T. McCann** succeeds Mr. Wolcott.

C. C. Lees, who for many years has been prominently affiliated with the distribution of boilers and radiators in the Philadelphia territory, has recently joined the sales force of the Fitzgibbons Boiler Co. Mr. Lees's connection

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BETTER BRASS FITTINGS
BRASS FITTINGS should be equal to the Pipe. Our Fittings are made for a steam working pressure up to 125 pounds.
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BETTER J BRASS FITTINGS

Jennings Pumps

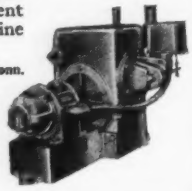
JENNINGS Condensation Pump and Tank Outfits are supplied in sizes up to 16,000 sq. ft. equivalent direct radiation, for returning to the boiler under pressure condensation from basement radiators, set below boiler water line level. Write for Bulletin No. 63.

Nash Engineering Co., 41 Wilson Rd., So. Norwalk, Conn.

Motor-driven Jennings Vacuum Pumps for return line steam heating systems are supplied in standard capacities up to 300,000 sq. ft. equivalent direct radiation.

Jennings Sewage Ejectors for raising sewage from low levels come in sizes up to and including 300 g. p. m. capacity against heads up to 50 ft.

Motor-driven Jennings Condensation Pump



BURKS SUPER-TURBINE PUMPS

"Only one moving part"

— A LIFE-TIME OF SERVICE! —

Dealers: Send for No. 83 Bulletin!

DECATUR PUMP COMPANY

632 E. Cerro Gordo St., Decatur, Ill.

THE ESTABROOK GREASE TRAP

For the job that must be done RIGHT the Estabrook Grease Trap is unsurpassed. It has a pot measuring 30x30 inches and the outlets can be furnished in 4, 5, or 6 inches.

Write today.

R. ESTABROOK'S SONS
204 First St., So. Boston, Mass.

UNCONDITIONALLY GUARANTEED

ARROW

TRADE MARK

STEEL TANKS

PNEUMATIC—STORAGE—SPECIAL

Black or Galvanized

The Novelty Steam Boiler Works Company

Clare and Kloman Sts. Baltimore, Md.

is with the newly opened Philadelphia office of this company.

Hugh Oliphant, secretary and sales manager of George H. Tay Company of San Francisco, will leave August 22 to be gone for six weeks. Mr. Oliphant will include in his itinerary Chicago, New York, Boston, Philadelphia, Buffalo, Pittsburgh, and other trade centers.

C. W. Wanger, president of Woodward-Wanger Co., Philadelphia, Pa., has recently been elected a director of the National Trade Extension Bureau. Mr. Wanger, for the past several years, has been spending a great deal of time addressing meetings of master plumbers on the subject of merchandising, and this new position is in recognition of his work along these lines.

C. W. Wanger

James F. Traynor, eastern coast sales representative for the American Pipe Tool Co. of Chicago, has just resigned from this position in order to retire from business. Mr. Traynor lives at 41 Hamilton street, Plattsburgh, N. Y., and he is planning to spend the rest of his days in leisure with his family and relatives. He was for many years a plumbing contractor, but in recent years a successful pipe tool sales representative, and the American Pipe Tool Co. was sorry to lose his services and is retaining him to some extent in an advisory capacity.

New Trade Literature

Circular of Pacific Steel Boiler Corporation of Illinois

Pacific Steel Boiler Corporation of Illinois, Waukegan, Ill., is sending out a circular illustrating schools in Los Angeles which are heated by means of the corporation's boilers.

Automatic Storage Water Heaters

The Thompson Water Heater Co., of Glendale, Calif., is distributing circulars containing a sectional view of its hot water heater. The various parts of the heater are named in the accompanying description.

Peerless Heater Co.'s Circulars

Peerless Heater Co., of Pittsburgh, Pa., is distributing circulars describing its water tube boilers for steam, vapor, vacuum and water heating systems. Another circular gives boiler data on the subject of smokeless boilers, designed to burn bituminous coal. A diagram shows measurements and assembly.

Vapor Thermostats

Klipfel Manufacturing Co., of Chicago, has issued a booklet describing six types of its self-contained vapor thermostats. The booklet includes a steam pipe chart for determining the proper thermostat valve size, and diagrams showing typical installations.

The Herman Nelson Corporation's Booklet

The Herman Nelson Corporation, of Moline, Ill., has issued a booklet consisting of sixteen pages, printed on

highly glazed paper, with numerous illustrations. The company's unit heater and its wedge core radiator are described. The booklet includes diagrams showing dimensions of unit heaters, and six pages of tables of capacities.

Folder of Dri-Steam Valve Sales Corporation

"D is for dryness desirable in steam" is the caption of an envelope insert being distributed by Dri-Steam Valve Sales Corporation, of New York City. The operation of the corporation's valve is discussed.

Diehl Manufacturing Company's Circular

Diehl Manufacturing Company, of Elizabethport, N. J., is distributing a circular illustrating its ventilating and exhaust fans, as well as ceiling fans.

Circular of Taber Pump Co.

A circular on the subject of centrifugal pumps is being distributed by the Taber Pump Co., of Buffalo, N. Y. Information on how to select a centrifugal pump is given, and the circular also includes a capacity and head table.

Kewanee Boiler Company's Circular

A circular being distributed by Kewanee Boiler Company, of Kewanee, Ill., illustrates four types of Detroit buildings in which the company's boilers are used. The circular bears the caption "F. O. B. Detroit."

An Electric Hammer

Black & Decker Mfg. Co., of Towson, Md., has issued a circular describing its new electric hammer. The hammer with its carrying case is described and illustrated. Accessories for use with the electric hammer are also listed.

Bulletin of Warren Webster & Co.

Bulletin 103, "Feed-Water Heaters," has just been issued by Warren Webster & Co., of Camden, N. J. Feed-water heaters of puddled wrought iron, as well as heaters of cast iron, are described in detail in the bulletin. Illustrations show many types of feed-water heaters. Several layouts show typical methods of installation. Instructions for ordering are also included.

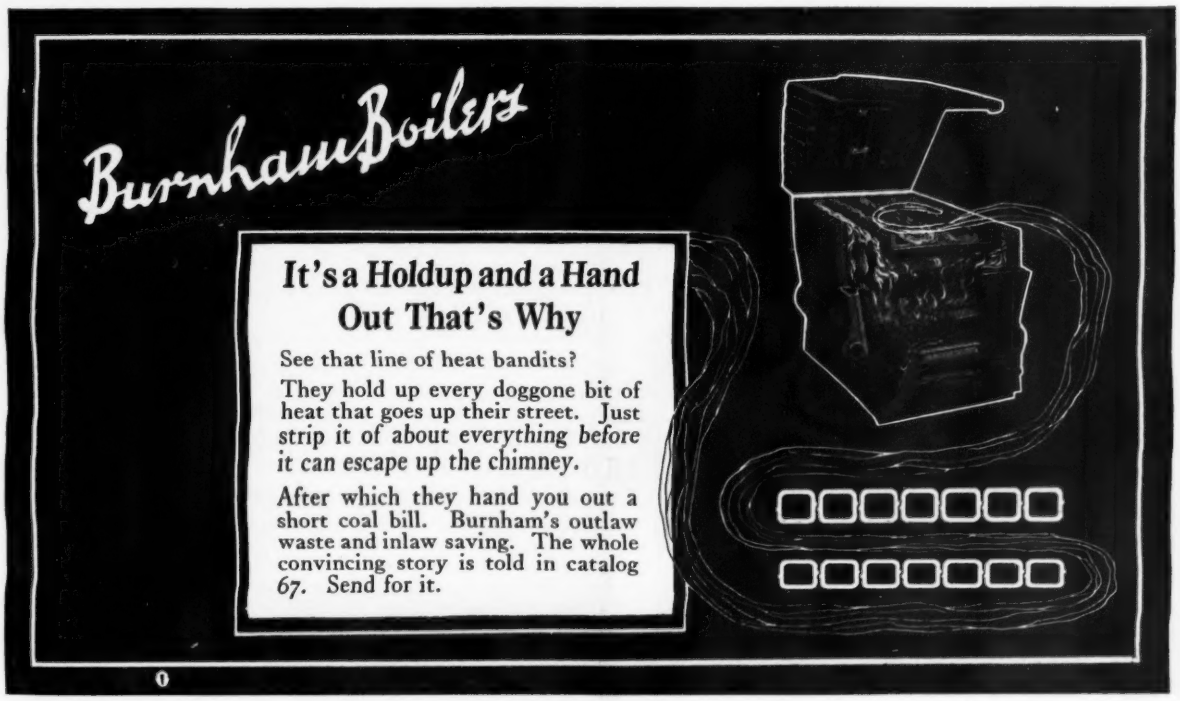
A. E. NORMAN WINS WESTERN TRADE CUP

At the August tournament of the Western Trade Golf Association, held at Westward Ho Golf Club, August 11, A. E. Norman, Jr., for the third time won the Association Cup and thereby annexed it as his permanent possession. This cup has been in play since 1920. Several members had their names on it twice, but none had been able to win it the third time until Norman did the trick. He shot a gross 72.

J. V. Brunner won the morning qualifying round, the prize for which was a sweater and hose set. E. H. Christiansen was first in Class A and B in the afternoon. His prize, too, was a sweater and hose set. E. W. Thomas, Jr., was runner-up in this class, and won a duffel bag. A. P. Campbell topped the Class C players, winning a driver for a prize. H. W. Evans was runner-up, a golf bag being the award for that honor. M. G. Henderson was first in Class D, receiving a sweater and hose set. C. O. Lippy was runner-up in this division and won a pair of hose.

The blind bogey prize, a pair of knickers, was won by James Doherty. E. Fox shot the best game of the guests, and received the association's guest prize. T. R. Seabrooke won the duffer's cup.

These prizes were awarded at the evening meal, after which several matters of business were transacted. The applications for membership of F. C. Staples, L. J. Wevang, Harold Maddock, P. M. O'Connell, Hale Denny, R. J. McKay, Al. Kroeger and Paul V. Hyland were accepted and passed on favorably by the members. Then the recom-


Burnham Boilers
It's a Holdup and a Hand Out That's Why
See that line of heat bandits?
They hold up every doggone bit of heat that goes up their street. Just strip it of about everything before it can escape up the chimney.
After which they hand you out a short coal bill. Burnham's outlaw waste and inlaw saving. The whole convincing story is told in catalog 67. Send for it.

New York Offices
30 East 42nd Street

Burnham Boiler Corporation

IRVINGTON, NEW YORK

Representatives in all Principal Cities of the U. S. and Canada

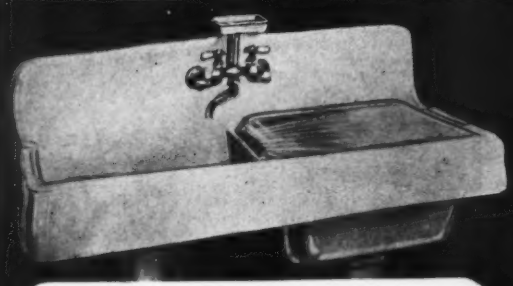
PROFIT

You will profit by handling Enterprise Brass Fixtures. They are sturdy and trouble-proof and will give the utmost in customer satisfaction.

Your Jobber will Supply You

ENTERPRISE BRASS WORKS
Muskegon, Michigan

SHERWHITE



Here's a Best Seller

For the combination sink and tray this Porcelain Enameled Cover will meet with instant approval. Just make the suggestion to housewives.

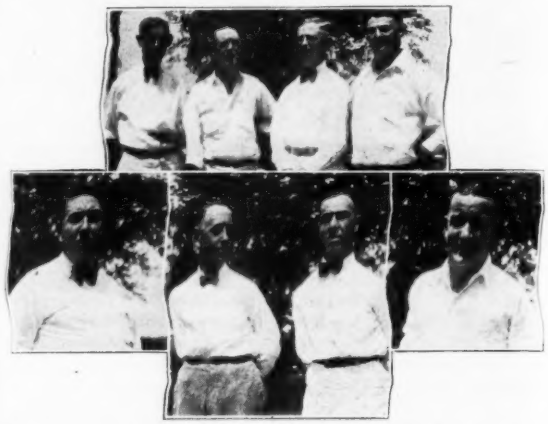
Sanitary--Economical--Long wearing

Patented November 25th, 1919—April 28th, 1925

SHOE-LETCHER CO.
10TH & HENDERSON STREETS, JERSEY CITY, N.J.

mendation of the directors that no further applications be received until after the total membership had dropped below 150 and that thereafter the number of members be limited to 150 was made a rule. It was also decided that no member can have the same guest more than once in a season.

There was a good deal of discussion about the coming Western Trade-Michigan Trade golf match, to be held at Battle Creek, Mich., September 21. Captain J. H. O'Brien was appointed as a committee of one to line up a good team and guarantee its appearance at Battle Creek. Because of the arduous duties a captain must perform at every golf tournament, it was decided that an assistant captain be appointed. J. A. Cutler was selected.



Top picture: J. T. Fitzsimmons of the Plumbing Sales Co.; Paul V. Hyland, architect; G. F. Mooney of the Service Plumbing and Heating Co.; T. R. Seabrooke of the Sloan Valve Co.—Bottom row: Howard W. Evans, treasurer of the association; O. H. Theleen of the Frost Mfg. Co.; Paul Woodbury of the Direct Control Valve Co.; Joseph Comer of Crane Co.

The scores of the day follow:

	Gross	Hdp.	Net
Paul Woodbury	96	14	82
O. H. Theleen	98	14	84
J. V. Brunner	103	28	75
H. W. Evans	92	21	71
G. F. Mooney	94	23	71
T. R. Seabrooke	116	30	86
Paul V. Hyland (Guest)	114	..	..
J. T. Fitzsimmons	96	23	73
J. Comer	94	14	80
E. M. Tennant	97	20	77
Hale Denny (Guest)	109	..	..
C. E. Price	110	30	80
C. A. Howe	108	30	78
P. M. O'Connell (Guest)	114	..	..
M. G. Henderson	89	26	63
L. W. Charlet	120	30	90
R. J. McKay (Guest)	130	..	..
E. W. Thomas, Jr.	84	12	72
H. L. Shepard (Guest)	92	..	..
N. P. Fenner	92	15	77
W. A. Taylor	94	22	72
G. C. VandenBoom	95	25	70
M. W. Maloney	101	23	78
F. J. Cushing	104	25	79
Walter Pincus	107	27	80
H. E. Crum, Jr.	99	22	77
R. E. Moore	102	25	77
W. J. Hajek	89	14	75
C. O. Lippy	98	30	68

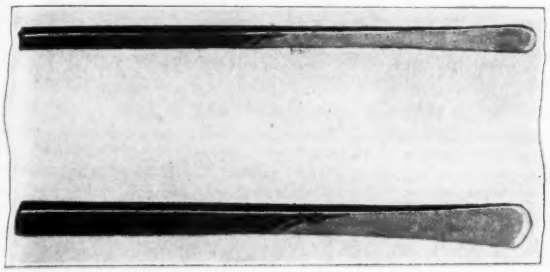
	Gross	Hdp.	Net
F. B. Hackett	106	23	83
F. C. Staples (Guest)	105	..	..
A. P. Campbell	89	20	69
W. E. Foskett	96	22	74
Cliff Presdee	107	30	77
G. P. Smith	No card		
E. A. Johnson (Guest)	No card		
F. E. Sloan (Guest)	No card		
J. L. Hoffman (Guest)	No card		
E. H. Christiansen	79	7	72
A. E. Norman, Jr.	72	3	69
Chas. Rand (Guest)	107	..	..
Robt. Tropf (Guest)	111	..	..
L. J. Pitcher	87	10	77
L. Wevang (Guest)	97	..	..
A. Kroeger (Guest)	100	..	..
J. C. Matchett	102	27	75
W. T. Walters	104	30	74
P. Munn	107	30	77
E. Ashby	104	26	78
E. Fox (Guest)	90	..	..
H. G. Thomas	97	20	77
Jas. Doherty	96	19	77
J. A. Cutler	92	17	75
W. P. McFarland	116	30	86
K. P. Beardslee	No card		

New Equipment

A New Way to Drill Holes in Tile

The operation of drilling holes in tile has always been one of the most troublesome details connected with bathroom and kitchen fixture installation. The purpose of the new tile drill illustrated here is to eliminate this trouble and to save time and effort in this work. This new method of drilling is said to involve an entirely new principle.

Everyone who has worked with tile knows how difficult, tedious and delicate an operation it is to drill holes in



standard tile. The operation averages about 10 minutes to a hole, and often results in a cracked tile or in the breakage of the drill.

The discoverers of this new tile-drilling process state that the drill itself is exceedingly simple, which may possibly explain why it has never before been put to use as a drill for tile. Working on the principle of reaming, it will bore a neat round hole in a standard size tile inside of five seconds, according to the statements of the manufacturers. The drill looks like an ordinary chisel, but tapers sharply at the end. Set in an ordinary brace it is claimed that it works smoothly, quickly and efficiently and that there is no danger of cracking the tile—that the hole is round and smooth and that the drill cannot possibly break off in the hole.

CONVENTION DATES

September 19-23, 1927.—The fall meeting of the American *Welding Society*, at Detroit, Mich., with headquarters at the Book Cadillac Hotel. A special section of the convention hall of 10,000 sq. ft. has been set aside for the Welding and Cutting Exposition, which is to be held in connection with the meeting.

September 28, 1927.—Tentative date of meeting of Advisory Committee on Vitreous China Plumbing Fixtures, Department of Commerce building, Washington, D. C.

September 29, 1927.—Quarterly conference of Presidents and Secretaries of Master Plumbers Clubs of the Southern District of California, in Master Plumbers Hall, Los Angeles, Calif.

October 10-14, 1927.—The ninth annual convention of the American Gas Association at the Stevens Hotel, Chicago.

February 14 to 18, 1928.—The Midwestern Engineering and Power Exposition, at Coliseum, Chicago.

COMING TRADE EVENTS

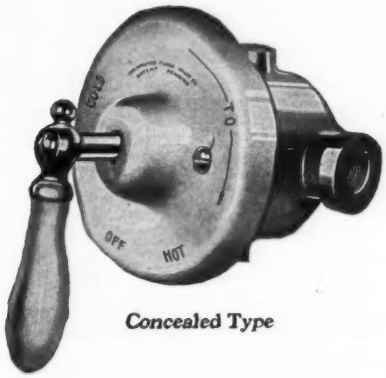
August 22, 1927.—The annual outing of Maine State Master Plumbers' Association, at Bay View House, Old Orchard, Me.

August 23, 1927.—The annual outing of the South Side Plumbers' Bowling Club of Milwaukee, Wis., at Borkenhagen's Resort, Windlake, Wis.

August 23, 1927.—Monthly tournament of the Metropolitan Trade Golf Association, at Yountakah Country Club, Nutley, N. J.

August 24, 1927.—The annual outing of the Master Plumbers' Association of Quincy (Mass.) and Vicinity, to be held at Webster House, Green Harbor, Mass.

August 24, 1927.—First annual outing of master plumbers, supply men, journeyman plumbers and their families in Davenport, Iowa; Rock Island and Moline, Ill., at Credit Island, Davenport, Iowa.



Concealed Type

ANOTHER JOHNELL PRODUCT

The "IMPROVED"

Milwaukee Mixing Valve

PATENT PENDING

As its name indicates, the "Improved" Milwaukee is a *BETTER* mixer, more accessible,

WITH ONE PLUNGER

—the ultimate in simplicity. High grade red brass castings, all working parts renewable, no binding, positive closure, making this mixing valve

THE KIND OF VALVE YOU CAN'T WEAR OUT

For a complete line of concealed showers and fixtures, ask for our new catalog "F"

ORDER FROM YOUR JOBBER

Manufactured by

Milwaukee Flush Valve Co.

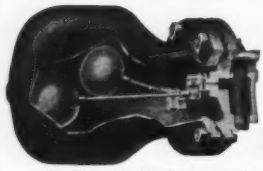
Milwaukee, Wis., U. S. A.

E Z
RADIATOR HANGER

The good word is spreading. Every woman appreciates legless radiators because there's nothing to interfere with mop or sweeper. Clear floors are easy to clean!
E-Z Hangers require only one bolt per hanger. They are adjustable both laterally and vertically. Anchor bolt does not require accurate placing. Adapted to any wall, any legless radiator. *Use these better hangers.*

HEALY-RUFF COMPANY
770 Hampden Ave., St. Paul, Minn.

Style R



An Ounce of Prevention

Boiler trouble is expensive. We don't give McDonnell & Miller Duplex Water Feeders away, but they cost a lot less than trouble. Prevent burned boilers and cracked sections by installing McDonnell & Miller Duplex Water Feeders on all low pressure steam heating jobs.

Ask for Bulletin D 6.

McDONNELL & MILLER
WRIGLEY BUILDING, CHICAGO (2)
Eastern Warehouse Stock, Bush Terminal, N. Y.

15. WHY— TABER
Automatic Midget
SUMP PUMP

Cover plates cost money to make and ship. But the Taber cover plate is one more reason to prove there has been nothing left undone to insure satisfactory operation.

BE SURE! INSTALL A TABER
Write for Bulletin MJ 727 NOW!

Building quality pumps 68 years TABER PUMP CO., BUFFALO, N.Y.

Paragon OFFSET BALL COCK

FOR tanks with supply close to corner. You don't touch the supply connection when you renew the bronze seat. And the lead refill neither splits nor corrodes. A quality fitting throughout. Write for Folder on complete line.
Through Your Wholesaler

The CENTRAL BRASS Mfg. Co.
PARAGON DIVISION CLEVELAND O.

August 24, 1927.—The annual outing of the Master Plumbers' Association of Baltimore City, Inc., to be held at Heintzeman's Shore.

August 25, 1927.—The fifteenth annual clambake of the Master Plumbers' Association of New Bedford, Mass., and Vicinity, Inc., at Whitfield's Pavilion, Fairhaven, Mass.

August 26, 1927.—The annual outing of the Master Plumbers Association of the Oranges at Connor's Hotel, Water Witch, N. J.

August 27, 1927.—The outing of the South and North Shore Master Plumbers Associations of Long Island, at Lighthouse Inn, Freeport, L. I., N. Y.

August 27, 1927.—The annual clambake of the Master Plumbers' Association of Plainfield, N. J., and vicinity, at H. Pfaff's restaurant, Park avenue road, near Metuchen, N. J.

August 27, 1927.—The annual outing of the Master Plumbers' Association of Utica, N. Y., at Miller's Grove.

August 31, 1927.—The annual outing of the Master Plumbers' Association of Montclair, Bloomfield, Verona (N. J.) and vicinity, at Idlewild Park, Little Falls, N. J.

September 8, 1927.—September tournament of Western Trade Golf Association at Glen Flora Country Club, Waukegan, Ill.

September 10, 1927.—The annual outing of the Master Plumbers' Association of Jersey City, N. J., to be held at Blasberg's Farm, Hawthorne, N. J.

September 14, 1927.—The annual outing of the Bronx Branch of the Master Plumbers' Association of New York City, at Karatsonyi's Hotel, Glenwood Landing, Long Island.

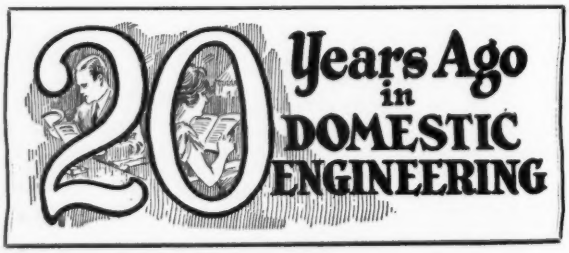
September 14, 1927.—The annual clambake of the Master Plumbers & Steamfitters' Association of Westchester County, N. Y., at the Colonial Inn, City Island.

September 16, 1927.—Golf tournament of the Plumbing Contractors' Association of Chicago at Evergreen Golf Club.

September 21, 1927.—Joint tournament of Western Trade Golf Association and Michigan Trade Golf Association, at Battle Creek Country Club, Battle Creek, Mich.

September 24, 1927.—The annual outing of the Queensborough branch of the Master Plumbers Association of the City of New York at Narragansett Inn, Lindenhurst, L. I.

October 7, 1927.—Last tournament of season of the Western Trade Golf Association, at Calumet Country Club.



August 17, 1907

President T. A. Hill, of the National Association of Master Plumbers, has just made formal announcement of the membership of the board of directors for the coming year. The board will comprise R. B. Moodie, Dayton, Ohio; E. D. Hornbrook, Kansas City, Mo.; C. H. Cronin, Boston; Jacob Isaacs, Louisville, Ky.; Frank A. Jay, Los Angeles, Calif.; C. P. Tietze, Detroit, Mich.; Alfred Gawthrop, Wilmington, Del.; John Trainor, Baltimore, Md.; Thomas J. Young, Mobile, Ala.; A. Selden Walker, East Orange, N. J.; D. J. Hickey, Chicago. By virtue of their office Vice President W. H. Halsey, Milwaukee; Secretary T. S. Cochrane, Jr., New York City, and Treasurer William McCoach, Philadelphia, will also be members of the board.

—1907—

The master plumbers of New Castle, Pa., have formed a permanent organization to be known as the New Castle Master Plumbers' Association. Edward Stevenson was elected president, and Frank P. Andrews, secretary.

—1907—

The Master Plumbers' Association, of Syracuse, N. Y., held its annual outing at Owasco Lake, Auburn, N. Y., on Wednesday, August 14.

THE TRADE

WITH MASTER PLUMBERS AND HEATING CONTRACTORS

OFFICERS AND GOVERNORS OF UTAH SANITARY AND HEATING ENGINEERS MEET

A meeting of the officers and board of governors of the Salt Lake City (Utah) Association of Sanitary and Heating Engineers was held in the association rooms on August 3. The tentative appointments of A. H. Higham, Salt Lake City, and E. O. Moe, Provo, as members of the board of governors were made. The two vacancies were caused by the death of Parley Burt, Springville, and by the resignation of Herbert B. Cromar, Salt Lake City. Mr. Moe is a former member of the board, while Mr. Higham served two terms as president of the state organization. The following were present: President Bywater; A. E. Buckley, Provo; Morgan Lott, Lehi, and O. S. Walsh.

CHOSEN COMMITTEE MEMBERS OF SALT LAKE CITY CHAMBER OF COMMERCE

Among the representatives of the plumbing and heating industries who have been chosen to serve on the standing committees of the Salt Lake City, Utah, chamber of commerce during the coming year are Ralph D. Evans and Leon B. Hampton. Mr. Evans, who is past-president of the Salt Lake Association of Sanitary and Heating Engineers, is a member of the building and construction committee; while Mr. Hampton, who is manager of the Salt Lake City branch of Crane Company, is a member of the finance and municipal water supply committees.

CHAMPAIGN ASSOCIATION ACTIVE IN MERCHANTS' EXPOSITION

A Merchants' Exposition, sponsored by the chamber of commerce, was opened in Champaign, Ill., on August 1. The Champaign Master Plumbers' Association took an active part in the exposition, using two booths to put on an elaborate exhibit of modern plumbing equipment.

WARREN COMPANY OPENS NEW HOME

The Warren Co., of Houston, Tex., was host at a housewarming recently on the occasion of moving into its new home at Louisiana and Walker streets. The building is a

THE MEMPHIS CONVENTION OF 1928

Message to the Trade by Thomas F. Nolan, National President

AS THE trade knows, a majority vote of the delegates in attendance at the recent Minneapolis Convention decided that the 46th annual convention of the National Association of Master Plumbers of the United States, scheduled for June, 1928, be held in Memphis, Tenn.

Thomas F. Nolan

With a view to ascertaining first hand information as to conditions in Memphis and its availability and facilities for handling such a gathering as ours, I appointed a special committee of investigation. This committee visited Memphis during July and I now have its very interesting and favorable report before me.

According to the report, a wonderful spirit of cooperation appears to prevail between the local association of master plumbers, the city officials, the chamber of commerce, the hotel interests, and the representatives of local manufacturers and jobbers in our line, in desiring our convention.

Memphis, from all indications, possesses every requisite to meet our many needs. They have a fine municipal auditorium, a little smaller than the one at Minneapolis, and an ample supply of good hotels to house our delegates and visitors. The Peabody Hotel—a new and imposing structure with a very large lobby and every other modern hotel requisite—the committee recommends for headquarters.

We are informed that about 300 conventions were held in Memphis last year, and that the city is no novice in this particular line of activity. The Memphis Association of Master Plumbers offers to furnish all the entertainment, which, it is said, will be characteristic of Southland.

Memphis is a large city, nearing the 300,000 mark. It possesses, we understand, many attractive features, including beautiful parks and drives. As regards its summer climatic conditions, June, it is said, is, as a rule, comfortable.

On July 27, when our committee was in Memphis, the thermometer there registered 92. On the same date, a number of other cities showed registrations as follows: St. Louis, 96; Omaha, 96; Des Moines, 96; Huron, 94; Kansas City, 94; Boise, 94; Baltimore, 92; Chicago, 92; Minneapolis, 90; Cincinnati, 90; Detroit, 88; Cleveland, 88; New York, 86; and Denver, 84.

From these figures, it will be seen that some of our northern cities have little or nothing on Memphis in so far as summer temperature is concerned. At any rate, Memphis has been selected for our 1928 convention; they expect us and are preparing to show us what southern hospitality means.

Now, then, let us all put our shoulders to the wheel and begin right now to make our preparations with the determination to make the Memphis convention one of the best ever.

one-story structure, of hollow tile, brick and stone with ornamental decorations. The building provides 10,000 sq. ft. of floor space, of which 3,000 has been taken over by the Warren Co., while the remaining space has already been leased for a period of five years. In addition to the 3,000 sq. ft. which will be used for offices and a display room, the company has 5,000 sq. ft. of additional space immediately back of the new building which will be utilized as a pipe yard. The company carries a large stock of plumbing and heating goods.

The concern was incorporated in 1914 with a capital stock of $10,000. Two years later, this capital was increased to $20,000. And in 1922, it was raised to $50,000. Mr. Warren has been engaged in the plumbing business for more than 25 years and at the present time employs 40 journeyman plumbers, apprentices and estimators. Some of the largest buildings in southern Texas have been serviced by this firm, including the new Niels Espersen building, which is the largest in the state. The officers of the company are: B. W. Warren, president; J. W. Phillips, vice-president, and W. H. Bruecher, secretary-treasurer.

ST. LOUIS MASTER PLUMBERS PICNIC AT CRYSTAL LAKE SPRINGS

On Saturday, August 6, nearly one thousand members of the plumbing and heating fraternity of St. Louis, Mo., including master plumbers, journeymen, representatives of supply houses, and their families, met at Crystal Lake Springs, an ideal resort for such a gathering, for the annual outing and basket picnic of the St. Louis Master Plumbers' Association.

The well-arranged program included so many games and contests that each person from eight to eighty years of age had an opportunity to test his skill in some sort of out-of-door event. Attractive prizes, most of which were donated by the local wholesalers, were awarded the winners of each event.

The baseball game between the master plumbers and the wholesalers was called at the end of the fifth inning with the former on the long end of a 7 to 2 score. Among the other events included on the afternoon's program were: Wheelbarrow race for boys 12 to 16; flour blowing contest for girls 12 to 16; shoe scramble for boys 8 to 12; balloon race for girls 8 to 12; 100-yard dash for apprentices; pie pan and potato race for girls over 16; cracker and whistle contest for boys over 16; clothes line race for married ladies; football kicking contest for wives of association members; elimination contest for association members; spoon and egg race for journeymen; potato race for officials and salesmen of supply houses; football throwing contest for city hall employes.

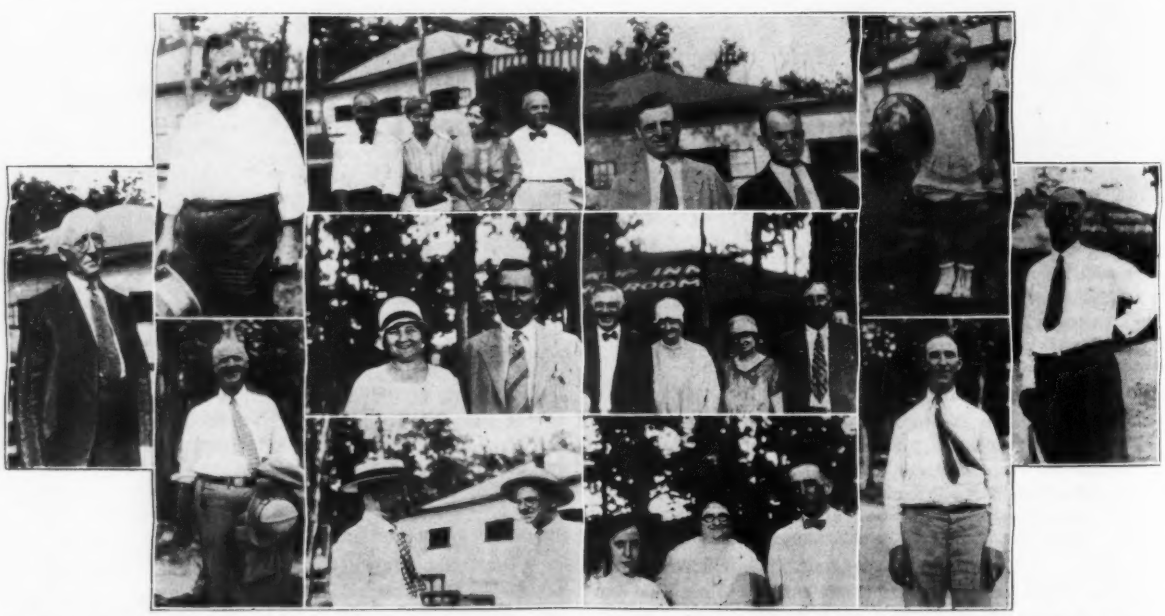
Following the afternoon events and the basket dinner, the picnickers spent the evening dancing in the pavilion.

OAKLAND COUNTY AND PORT HURON MASTER PLUMBERS HAVE OUTING

Harvey Auger, manager of Murray W. Sales & Co.'s Branch at Pontiac, Mich., entertained about 60 master plumbers from Oakland County and Port Huron, Mich., on Tuesday, August 2, at Stag Island, a beautiful island opposite Marysville, Mich., and which is owned by the Canadian Government.

The Port Huron plumbers arrived about 9:30 a. m. in speed boats, and the Oakland County plumbers drove to Marysville by auto and from there were taken by boat to Stag Island. Murray W. Sales and Carter Sales came direct from Detroit in Mr. Sales's cruiser. Arthur Daniels, general sales manager at Murray W. Sales, and J. B. Stewart of the Republic Brass Co., Detroit, Mich., were also present.

A fine chicken dinner was served and, after justice had been done to it, talks were made by Murray W. Sales and Carter Sales, Harvey Auger acting as toastmaster. During the afternoon, Murray W. Sales took moving pictures of the plumbers, and then the athletic events were started.



At the St. Louis Master Plumbers' outing.—Extreme left: A. B. Pierce, vice president and general manager of the N. O. Nelson Mfg. Co.—Extreme right: William Hunt of Wm. Hunt & Son.—Top row: J. M. Ward; Mr. and Mrs. G. P. Weber and Mrs. and Mr. J. D. Els; Joseph Lynch and Jere Sheehan, Jr., vice president of the national association; Miss Opal Ward.—Middle row: Mrs. and Mr. Charles Quinn; Past National President L. McNamara and Mrs. McNamara, with Mrs. and Mr. Ed. Quinn, president of the St. Louis association.—Bottom row: J. J. McCue, chairman of the entertainment committee; E. E. Manahan and P. D. Finn, members of the entertainment committee; Miss Mary Corrigan, and Mrs. and Mr. John F. Corrigan; E. J. Blake, general secretary of the St. Louis association

The horse-shoe pitching contest was won by the Oakland County Plumbers' team, which was composed of W. J. Phillips and M. A. Cahoon.

The big event of the day was the ball game between Port Huron plumbers, John Watson, captain, and the Oakland County plumbers, Bert Edge, captain. The pitching of both teams was good, except in the third inning, and both teams took on an exciting game. However, the Oakland County plumbers finally won out with a final score of 16 to 9. Joseph Stewart of the Republic Brass Co. was behind the bat as umpire, and A. W. Moss of Warren, Mich., was base umpire. Arthur Daniels was the official scorer.

After the ball game, Mr. Auger served an elaborate lunch and refreshments, and he was given a hearty vote of thanks for making the outing a great success.

PATERSON MUTUAL ASSOCIATION'S OUTING A PLEASANT SUCCESS

On Saturday, August 6th, the Paterson Master Plumbing & Heating Engineers' Mutual Protective Association held its Twenty-sixth Annual Stag Outing at Feltman's, Coney Island. Whoever picked the day was certainly a weather prophet, as the weather was ideal and the trip

Top row: P. Backman of the B. & O. Sales Corp.; Samuel Taylor; Patrick Gilmour of Thatcher Co., Newark; Robert I. Scott, manager Paterson branch American Radiator Co.—Second row: Joseph Wishnefsky; Morris Jaffe of Harris & Jaffe; John J. Baker of John Baker & Son; Frank Vreeland.—Third row: A. Lombardi; A. Santucci, plumbing inspector of Paterson; H. F. Demerest of White & Shauger, Inc.; Frank J. Micelli; C. F. Bailey, secretary of the association.—Bottom row: Herbert Rutt; J. F. Tattersall of the John S. Norton Co., Jersey City; E. Miller; C. B. Wynne, Newark manager Standard Sanitary Mfg. Co.; J. Harris of Harris & Jaffe.

down by boat from New York was very pleasant. After luncheon the entire party went to Steeple Chase Park and indulged in the many atractions of this famous resort; Robert I. Scott and Patrick Gilmour leading the cheering. Following some surf bathing on the part of most of the members, they all returned to Feltman's for one of the dinners for which this institution is famous.

Lexington, Mass.—Plans are being prepared for a swimming pool, to be erected by the town at the Centre playground.

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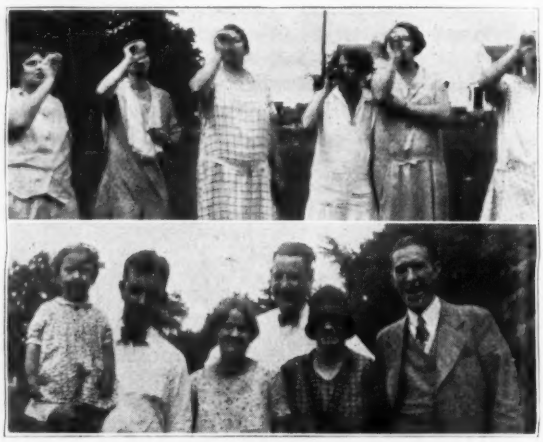
DELAWARE COUNTY MASTER PLUMBERS HOLD SUCCESSFUL OUTING

The Master Plumbers' Association of Delaware County, Pa., held its annual outing on Saturday, August 6, at Chester Park, Chester, Pa. A large group of plumbers, their wives and children as well as guests, including many members of the supply fraternity, turned out for the day's outing.

Walter F. White, chairman of the outing committee, consisting of Wm. Taylor, Howard Kelly, Thos. Schaffer and Wm. Kelly, arranged for a large card of field events which started immediately after lunch.

Mrs. Walter White won a box of candy for being first in the needle-threading contest. In the candy-eating contest Miss E. Rhoads won first prize and an apron. Mrs.



Top picture: The nursing bottle contest for ladies.—Bottom picture: Mr. and Mrs. W. J. Carr with Mary Carr; Mr. and Mrs. B. H. Jones; E. J. Ball

Walter White also won an apron for being first in the 50-yard dash for ladies. Elizabeth Taylor won a book in this event for girls. Robt. Turner received a baseball for winning this event for boys.

Mrs. Howard Kelly and Mrs. Walter White won the three-legged race for the ladies and each received a box of candy. Mrs. Robert James, Jr., won the nursing bottle contest and received a baby doll and an apron.

In the girls' shoe race, Elizabeth Taylor won a box of candy. Chas. Reynolds won this event for the boys and received a book.

In the men's race, Wm. Kelly and F. A. Hannigan ran two dead heats and both were rewarded with prizes.

J. H. Covington and K. Scott tied in the sack race and each received cigarettes as prizes.

Wm. Boyd and K. Scott won the three-legged race for men and received a carton of cigarettes.

In the sack race for girls, Elizabeth Taylor came in first and received a book. In this event for boys, Wm. Sweeney received a book as first prize.

Mrs. G. S. Mitchell won the bottle contest and received an apron. Violet Whittle won this event for the girls and received a book. In this event for the boys, Edgar Simpers received a baseball.

Mrs. J. H. Covington won the peanut-rolling contest and a box of candy. Esther James won this event for the girls and also a box of candy.

By the time the athletic events were over it was too late to have the scheduled baseball game between the master plumbers and the salesmen, so the baseball enthusiasts played a game of moving up until dark.

Thus ended one of the association's best outings.

Women's Auxiliaries

ANNOUNCE OFFICERS, DIRECTORS AND COMMITTEES OF WOMEN'S AUXILIARIES

An announcement just received from Mrs. E. D. Hornbrook, president of the Women's Auxiliary to the National Association of Master Plumbers, gives the list of officers of the National Auxiliary, presidents of the state auxiliaries, and state and local scholarship committees.

The complete roster of officers and committees is as follows:

Officers

President, Mrs. Edwin D. Hornbrook, 521 Garfield avenue, Kansas City, Mo.

First vice president, Mrs. J. A. Diggle, 2515 College avenue, Indianapolis, Ind.

Second vice president, Mrs. W. E. McAndrew, 301 West Francis street, Tampa, Fla.

Third vice president, Mrs. O. P. Bahneman, 4517 Dupont street, Minneapolis, Minn.

Recording secretary, Mrs. L. Nora Bailey, 3100 Fifty-fourth street, Des Moines, Iowa.

Corresponding secretary, Mrs. Fred Hacker, 911 Bellefontaine avenue, Kansas City, Mo.

Treasurer, Mrs. John Kelly, 812 Chestnut street, Chattanooga, Tenn.

Mrs. Wallace T. Wordell of Taunton; Mrs. I. G. Walters and Miss Lillian Walters, both of Everett; Mrs. J. Preston Perham of Boston, Mrs I. F. Whitmarsh of Taunton, Mrs. Daniel F. Loan of Worcester.—From photograph taken at the annual convention of the Massachusetts state association held recently in Boston

Auditor, Mrs. W. T. J. Orriss, 309 Kerrigan avenue, Union City, N. J.

Chaplain, Mrs. R. J. Reid, Shawnee, Okla.

Historian, Mrs. C. W. Wilson, 473 Alameda avenue, Youngstown, Ohio.

Trustee, Mr. G. W. Kendall, 431 Rodney street, Portland, Ore.

Parliamentarian, Mrs. Howard Bryant, 417 State street, Bridgeport, Conn.

Directors

Mrs. S. Pollitt, 1049 East Taylor street, Portland, Ore.

Mrs. J. L. Evans, 55 North Claybrook street, Memphis, Tenn.

Mrs. L. J. Rosenfield, 2122 Maryland avenue, Louisville, Ky.

Mrs. O. G. Johnson, 1517 Sixth street, S. E., Minneapolis, Minn.

Mrs. Charles Pelunek, 950 Island avenue, Milwaukee, Wis.

Mrs. J. C. Wall, 1118 South Burdick street, Kalamazoo, Mich.

Mrs. E. B. Clayton, 2408 East Colfax street, Denver, Colo.

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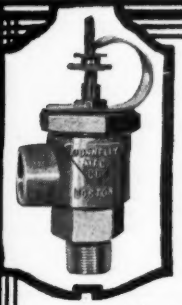

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Mrs. J. W. Woolley, 280 La Salle street, Buffalo, N. Y.

Mrs. W. A. Fritsch, 320 Home street, Avalon, Pa.

Mrs. M. J. Feeney, 6145 Lansdowne avenue, Philadelphia, Pa.

Mrs. W. T. Polley, 114 Sherman street, Hutchinson, Kan.

State Presidents: Mrs. J. W. Orth, Indiana; Mrs. Leslie H. Williams, New Jersey; Mrs. D. J. Ahearn, Ohio; Mrs. T. J. Boismier, Oklahoma; Mrs. Robert Liss, Illinois; Mrs. J. Preston Perham, Massachusetts; Mrs. Foster R. Fanning, Florida; Mrs. J. M. Bernardi, Oregon; Mrs. Ernest A. Wheeler, Maine; Mrs. W. C. Knox, Missouri, and Mrs. William Hughes, Michigan.

State Scholarship Committees for 1927-1928

New Jersey: Mrs. J. J. Corcoran, chairman; Mrs. Chas. Werner, Jersey City; Mrs. Chas. Zimmermann, Union City.

Florida: Mrs. A. T. Engebretson, Miami; Mrs. Lee Sheffield, St. Petersburg; Mrs. Bernard Ginty, St. Augustine; Mrs. W. F. Mann, Orlando; Mrs. A. S. Klemenstrude, Bradenton; Mrs. Chas. Koegel, Jacksonville; Mrs. J. McGhan, Tampa.

Connecticut: Mrs. G. D. L. Raymond, Stamford; Mrs. J. Williams, New London; Mrs. A. A. Mills, New Britain; Mrs. Howard Bryant, Bridgeport.

Oregon: Mrs. George W. Kendall, Portland; Mrs. T. J. Rowe, Portland; Miss Mary Schoettle, Salem; Mrs. C. P. Yundt, Corvallis; Mrs. W. F. Scott, Monmouth.

Massachusetts: Mrs. Wallace Wordell, Taunton; Mrs. Andrew McGlynn, Taunton; Mrs. George B. Lewis, Barnstable; Mrs. J. P. Perham, West Roxbury.

Maine: Mrs. E. A. Wheeler, Portland; Mrs. C. Madsen, Woodfords.

Oklahoma: Miss Emily Hanson, Oklahoma City; Mrs. E. L. Estes, Shawnee; Mrs. H. O. Green, Tulsa; Mrs. W. E. Casemore, Ponca City; Mrs. W. E. Oliver, Muskogee.

Illinois: Mrs. R. B. Finn, Chicago; Mrs. B. Vodde, East St. Louis; Mrs. Fred Flader, Evanston.

Indiana: Mrs. A. C. Sandberg, La Fayette; Mrs. John Freitag, Terre Haute; Mrs. H. H. Highlands, Gary; Mrs. J. A. Diggle, Indianapolis.

Michigan: Mrs. G. M. C. Shaw, Flint; Mrs. M. Snyder, Detroit; Mrs. William Hughes, Detroit; Mrs. Leo J. Davis, Detroit; Mrs. J. C. Wall, Kalamazoo.

Missouri: Mrs. J. C. Friel, Kansas City; Mrs. H. J. Schuerer, Springfield; Mrs. Wm. Kuehne, St. Louis.

Ohio: Mrs. Jacob Brenner, Youngstown; Mrs. F. C. Clemens, Dayton; Mrs. W. Klie, Cleveland; Mrs. D. J. Ahearn, Canton; Mrs. C. J. Wehrle, Cleveland.

Local Auxiliary Scholarship Committees

Mrs. Gladys Swaim, Chattanooga, Tenn.; Mrs. George Hicks, Philadelphia; Mrs. John Keane, Pittsburgh; Mrs. George Roser, Louisville, Ky.; Mrs. J. P. Brickey, Denver, Colo.; Mrs. Charles Heffling, Milwaukee, Wis.; Mrs. M. Hoffman, LaCrosse, Wis.; Mrs. Edward Houde, Syracuse, N. Y.; Mrs. Fred Reimer, Buffalo, N. Y.; Mrs. F. W. Murtogh, Rochester, N. Y.; Mrs. Elmer Nelson, Wichita, Kan.; Mrs. Wm. Ball, Kansas City, Kan.; Mrs. W. T. Polley, Hutchinson, Kan.; Mrs. J. Hardie, Fort Worth, Tex.; Mrs. F. A. Burmeister, Memphis, Tenn.; Mrs. J. D. Keefe, Minneapolis; Mrs. C. D. Adamson, St. Paul; Mrs. James Gallagher, Nashville, Tenn.; Mrs. T. A. Irvine, Jamestown, N. Y.

San Francisco Auxiliary Entertains at Whist

A highly successful midsummer affair was thoroughly enjoyed by the ladies of the San Francisco Auxiliary when they met at the Swiss Chalet at the beach on August 4. A

delicious luncheon was followed by an afternoon at whist. An enlivening feature of the card-playing was the unusually close scoring, Mrs. S. Somersal turning in a count of 114. Miss Laura McLeod was a close second with a score of 113, Mrs. J. J. McLeod scoring 112.

Orlando, Fla., Auxiliary Elects Officers

The Women's Auxiliary of Orlando, Fla., recently elected the following officers for the ensuing year: President, Mrs. Foster R. Fanning; vice president, Mrs. Leo Lemire; secretary, Mrs. Charles Stuckie; treasurer, Mrs. W. F. Mann; sergeant-at-arms, Mrs. E. S. Stradley. Mrs. Charles F. Riecken was elected a member of the board of directors. The Master Plumbers' Association will have a meeting of

Four officers of the Women's Auxiliary of Orlando, Fla.—Left to right, Mrs. Foster R. Fanning, president; Mrs. Charles Stuckie, secretary; Mrs. E. S. Stradley, sergeant-at-arms; Mrs. W. F. Mann, treasurer

its board of directors next month, and the auxiliary is planning to have a directors' meeting also. During the summer months the Orlando Auxiliary is continuing its meetings at the homes of members, and a picnic and bathing party were recently given.

Canton Auxiliary Holds Picnic

The Canton Ladies' Auxiliary held an all-day picnic on August 2, at the summer home of Mrs. William Grabowsky at Congress Lake. A chicken dinner was served at a large table prettily decorated with garden flowers. Immediately after dinner the regular business was transacted. The afternoon was spent informally. Prize winners for the day were Mrs. D. J. Ahearn, Mrs. U. I. Bott, Mrs. William Grabowsky and Mrs. H. E. Zimmer. Mrs. H. E. Mueller of Tampa, Fla., a former member of the auxiliary, was a guest. Mrs. Herman Grabowsky and Mrs. A. W. Baum assisted Mrs. William Grabowsky in entertaining.

Tampa Auxiliary Plans to Aid Scholarship Fund

The regular meeting of the Women's Auxiliary to the Master Plumbers' Association of Tampa, Fla., was held Wednesday, August 3. President Mrs. George McGhan, Jr., called the meeting to order at the usual time. A small but enthusiastic number of ladies was present to discuss business affairs and to plan for activities during the remainder of the summer months. Bridge and luncheon parties having been set aside until cooler weather, attention was turned to various ways of keeping the treasury filled. The sum of $10 was received from a lecture, and the sale of assorted boxes of "handy" cards netted $8. A letter of thanks was read from the Tampa Chapter, American Red Cross, for the clothing sent to the flood district through that agency. Fifty-five garments were made by members of the Tampa Auxiliary. It was recommended that the auxiliary pledge $25 each to the national and state scholarship for 1927-28, and endorse the name of Alexander W. Murray for the 1928 Women's National Auxiliary Scholarship, as recommended by Mrs. E. D. Hornbrook. Refreshments consisting of tea cakes and iced tea were served by the entertainment committee.

Bathroom Fixture Fashions

NO 1020

NO 1019

No1016 No1017

NO 1018

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Times change. It's a long cry back to the time bath tubs were frowned on by certain city fathers.

Today Mrs. Smith, Mrs. Jabnowski and Mrs. Vander Morgan all know that good looking bathrooms are the hallmark of *good taste*. Many a bathroom is being freshened up with new fixtures.

There is good, strong demand for the best quality fixtures at a reasonable price and there is no line of bathroom fixtures that meets that demand in every respect as well as Maid-En-White Porcelain. Its glass hard, pure white surface will never turn yellow and is fully guaranteed. Our new catalog fully illustrates this and our Enamel and Nickel lines of fixtures.

Right now is a good time to write for complete information

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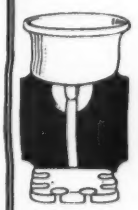
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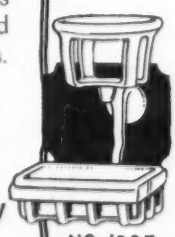
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Building News

The past week was a good one from the standpoint of construction, no let-up being apparent in the number and size of new projects, both contemplated and just commenced, reported by our correspondents. This activity is well sustained over almost the entire country and, according to the F. W. Dodge Corp., which each month reviews building activity in the 37 states east of the Rocky Mountains, construction is maintaining a large volume. Below are some of the larger projects recently announced:

San Antonio, Tex.—Preliminary sketches have been prepared for the Interstate Amusement Co., of Dallas, for the construction of a theater and office building in this city. Present plans call for a theater to seat 11,500 people, and to cost approximately $3,000,000.

San Antonio, Tex.—Plans are being drawn by Atlee B. and Robert M. Ayres, architects, Bedell building, for a 30-story mercantile and office building to be erected on Bowen's Island here. Among other features, it will have a constant-temperature ventilating system permitting windows in the offices to be closed on the warmest days. A. J. McKenzie Construction Company will have the general contract, and the cost will be approximately $2,000,000.

Los Angeles, Calif.—Plans have been completed for the first unit of what will be a $1,000,000 resort hotel at Norco, Calif., for the North Corona Land Co., 528 South Hill street, Los Angeles. Dwight Giggs, 1110 Fine Arts building, is the architect.

Los Angeles, Calif.—Preliminary plans have been completed by Architects Walker & Eisen, Western Pacific building, for a 13-story and basement apartment house, to cost $1,250,000. It will contain 140 apartments and is to be situated at the northeast corner of Alexandria avenue and Wilshire boulevard.

Astoria, Ore.—The Northwest Pulp & Paper Co., has announced definite plans for the proposed pulp and paper plant to be built on Young's river at a cost of $1,000,000 or $1,500,000. Plans have already been submitted to a group of paper mill engineering contractors, and it is expected that construction will start as soon as bids are in and awards made, states B. T. McBain of Portland, who will be general manager of all construction work. The city of Astoria will bring water to this new plant a distance of ten miles, and plans for this new water system are in the hands of Stevens & Koon, hydraulic engineers in the Spalding building, Portland.

San Antonio, Tex.—The San Antonio Athletic club, Alfred Von Jess, secretary, is having preliminary plans drawn by L. Harrington Co., Builders Exchange building, for a 12-story store and office building on East Houston street, to cost approximately $1,250,000.

Glendale, Calif.—Plans are being prepared by Architect Alfred F. Priest, 719 Fay building, Los Angeles, covering the new Northwest high school group, to contain seven buildings and cost $1,100,000. Working plans are going ahead for the new gymnasium, shop and classroom buildings at the Broadway high school site, which will cost $300,000. George M. Lindsey, Union Insurance building, Los Angeles, is the architect for this work.

Houston, Tex.—Plans have been completed by J. R. Cheek, Second National Bank building, and Rex B. Frazier, for the construction of a warehouse between the Bayou and M. K. T. passenger station of two units of ten and seven stories, respectively.

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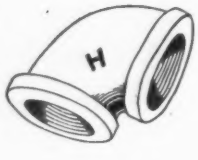

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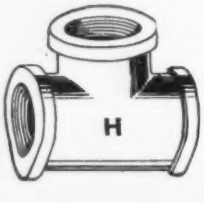

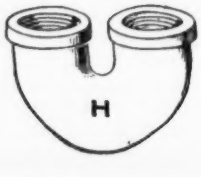

THE HAYDENVILLE CO.
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Institutions

Richmond, Va.—The plumbing contract has been awarded to E. R. Harris, 5413 Grove avenue, in the erection of the $250,000 Hospital for Crippled Children in this city.

Baton Rouge, La.—Brasher & Rambach, Laurel street, have the contract for installation of the plumbing and heating systems in the music building for the Louisiana State School for Blind.

Marshall, Texas—Marshall is to have a $200,000 hospital to be erected by the Texas & Pacific Railway Hospital Association. Work on the structure will start within 60 days.

Torrington, Conn.—The Charlotte Hungerford hospital is to have a large addition, to cost about $500,000. Crow, Lewis & Wick, New York architects, have been selected to prepare the plans. Thomas W. Bryant is chairman of building committee.

Chippewa Falls, Wis.—John Phalen has been awarded the heating and plumbing contracts on his low bids of $6,249 and $6,012, respectively, for a hospital addition being erected here.

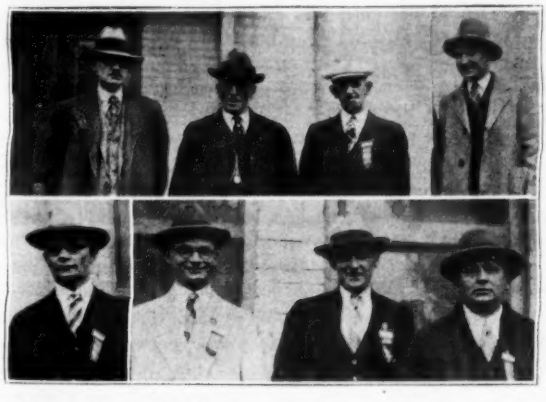
Atchison, Kan.—W. B. Hayes has been awarded a contract to install a heating system in the State Orphan's home in this city. The contract amounts to about $20,000.

Long Beach, Calif.—Plans for a *$500,000, 150-bed hospital*, of four-story and basement construction, to be erected at Tenth street and Linden avenue for the Sisters of Charity of the Incarnate Word, are being prepared by Architect I. E. Loveless, Commonwealth building, San Diego.

Oakland, Calif.—*Plans are being prepared by* Frederick Reimers, architect, Tribune tower, covering a $150,000, four-story hospital building to contain 50 rooms and baths, X-ray rooms, operating rooms, solarium, etc. It will be situated at Fourteenth street and Twenty-seventh avenue and will cost $150,000.

***Milwaukee*, Wis.**—The Paul E. Mueller Co. has been awarded the heating contract on the *$400,000 school of* nursing and service building to be erected at Lake Drive and Terrace avenue here. S. V. Hanley has been awarded the plumbing contract.

Kenosha, Wis.—Kaelber & Kraft have been awarded the plumbing contract on the new Home for the Aged.



Top row: J. J. Schletinger of Bridgeport, George A. Bull of Hartford, H. J. Kennedy of New London, and H. F. Stenstream of Bridgeport.—Bottom row: O. A. Peterson, W. R. Fenn, Thomas Firth and Louis Croll, all of New Britain.—From photographs taken at the annual convention of the Connecticut state association held recently in Bridgeport

for ALL HOMES

A hot water service-

The Dahlquist Patented Aquatherm Copper Range Boiler represents the latest step forward in scientific water heating progress.

The patented Dahlquist Aquatherm, using an entirely new water circulation principle, converts the boiler into a quick hot water supply and storage system in one. It has revolutionized hot water supply equipment, for at no extra cost it more than doubles the service rendered by the *range boiler.*

Dahlquist Copper Range Boilers contain in addition to the Aquatherm, many other points of superiority:—

They are made entirely of heavy Lake copper and hence last indefinitely even under the most severe water conditions.

They are guaranteed *in writing* for 25 years.

They are made in all standard capacities from 25 gallons upward, and in test pressures to meet any condition.

They operate equally well with heaters using *gas, electricity,* kerosene oil or coal, and therefore are not dependent upon fuel supply conditions.

They are made by the largest manufacturers of copper boilers in the United States with facilities enabling the lowest prices.

TYPICAL LIST PRICES:

25 gal. 200 lb. Aquatherm Copper Boiler, without heater	$ 42.50
25 gal. 200 lb. Copper Boiler with gas heater, non-automatic	63.00
25 gal. 200 lb. Aquatherm Copper Boiler with gas heater, automatic	113.00
25 gal. 200 lb. Copper Boiler with electric heater	103.00
25 gal. 200 lb. Copper Boiler with kerosene or coal heater	76.00

Full information including specifications of Dahlquist Patented Aquatherm Copper Range Boilers with or without heating units are embodied in the Data Book sent free on request.

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Haas

Flush Valves for use in combination with all styles of bowls for all classes of service to operate under low or high pressure water supply.

Water Closets for every type or class of service.

Frost Proof Closets. Direct flush or after flushing.

Write for catalog.

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UNITEM

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Heats Water With Water

Makes separate water heater unnecessary.
Saves 50 to 70 of fuel bills.
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Operates in summer and winter with equal satisfaction.
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"Eafco" COMBINATION

This cesspool and rainleader is made to caulk over a 4" soil pipe. It is a leader in this type product. Write for catalog.

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Don't Be Content

With ordinary Roof Flashings

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"SIMPLEX"

Made in All Lead—Copper—Galvanized Iron

Every Flashing Adjustable
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Manufactured only by

SIMPLEX MFG. COMPANY, 213 W. Austin Ave., Chicago

Stores and Office Buildings

Dallas, Tex.—The Dallas Plumbing Co., 1425 McKenney street, has the heating and plumbing contracts for the $400,000 office building under construction in Dallas for R. E. Burt and others.

Portland, Ore.—Jennings & Sons, furniture concern now located at Fifth and Washington streets, have announced a large program of proposed expansion. They will build an office structure of 11 stories on a site not yet definitely determined on the west side of the city, to house the retail sale and office quarters of their business. On the east side of the river they will build a four-story warehouse and delivery depot of reinforced concrete 200x200 ft., on the block bounded by Gilsan street, Union avenue, Grand and Flanders. This will also be used as garage and shipping quarters.

Jacksonville, Fla.—The Olmstead Motor Co. has announced plans for the erection of a $150,000 building to be located at the corner of Laura and Union streets.

St. Augustine, Fla.—The First National Bank will erect a new $250,000 structure in this city.

Lynchburg, Va.—Guggenheimer's, Inc., will erect a new store here which will represent when finished an investment of more than $300,000.

Glendale, Calif.—Preliminary plans for an 8-story, class A, professional building to be erected at 1052 West Sixth street for the Professional Building Co., have been completed. Alfred F. Priest, 719 Fay building, is the architect.

Sedgefield, N. C.—Hunt Brothers, 407 Walker avenue, Greensboro, have the plumbing contract, and W. W. Dick, 246 Bellemeade street, the heating contract on the $650,000 Pilot Life Insurance Co. home office building.

Apartments and Hotels

Oakland, Calif.—The Scott Co., 113 Tenth street, was awarded the plumbing and heating contract for the six-story, 120-room apartment building at Lake and Jackson streets.

Kansas City, Mo.—The Mosby Goodrich Construction Co. has the general contract for a $140,000 apartment hotel at 511 West Eleventh street, for H. A. Clinger.

Seattle, Wash.—Andrew McQuaker, architect in the McDowall building, who planned the 8-story Stratford hotel to be built at Third avenue and Seneca street, announces that the plumbing and heating contract has been let to the University Plumbing and Heating Co., 3939 University Way. This building is to be of class "A" construction containing 125 rooms each with private bath. The owner is the Seneca Street Improvement Co.

Seattle, Wash.—Announcement is expected soon concerning the construction of a 15-story fireproof hotel building to contain 300 rooms, located near the Orpheum theater. Vernon C. Suckow is the engineer in charge of the plans. His offices are in the Central building.

La Feria, Tex.—Frank Rabb is having preliminary plans drawn for resort hotel, dance hall and recreation center to cost $200,000. P. G. Silber & Co., Bedell Bldg., San Antonio, architects.

Childress, Tex.—The Muskogee Plumbing & Heating Co., of Muskogee, Okla., has been awarded the plumbing and heating contracts on the new hotel under construction here, with a combined bid of $36,850.

San Francisco, Calif.—Anderson & Rowe, 45 Belcher street, have been awarded the plumbing contract on the

$150,000 apartment building at Broadway and Gough streets.

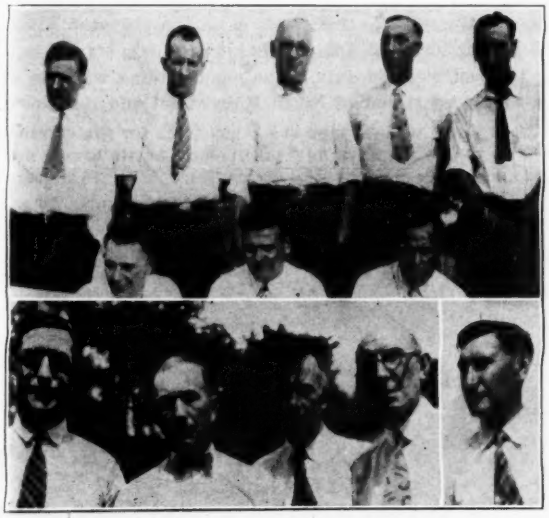
Vancouver, B. C., Canada—An apartment house of thirty suites, to cost $100,000, will be erected here by Bell, Irving, Creery & Co.

Seattle, Wash.—The Seattle Construction Company will erect a fireproof store and apartment building at the northwest corner of 85th avenue and Greenwood to cost approximately $165,000. O. F. Nelson, Lumber Exchange building, is the architect.

Quincy, Mass.—Abraham & Cohen, 333 Washington street, Boston, are receiving estimates for sub-contracts in connection with a proposed apartment house on Watterson street. Architect S. S. Levy, 35 Court street, Boston, has completed plans for a three-story brick building, estimated to cost $125,000.

Walla Walla, Wash.—The addition of 15 rooms to the New Walla Walla hotel making 175 rooms in all, and a proposed plan of extending the cool air circulating system to each guest room, has been announced by W. W. Baker.

Vancouver, B. C., Canada—Involving a total expenditure of approximately $250,000, an apartment house containing 30 suites will be built at Jarvis and Pacific streets. A



Top picture: The members of the committees: Front row, Ray Connor, John R. Ellison and W. J. Bradford, chairman of the masters' committee; back row, H. W. Dunlap, chairman of the journeymen's committee; W. L. Broadhead, Charles L. Pyle, I. K. Alford and F. J. Weiss.—Bottom row: William Shaddock, Fred H. Kay, treasurer of the New Castle association, Clair E. Arble, Frank P. Andrews, vice president of the New Castle association; Charles F. Stevenson, secretary of the New Castle association.—From photos taken at the recent annual outing of the New Castle, Pa. master and journeyman plumbers

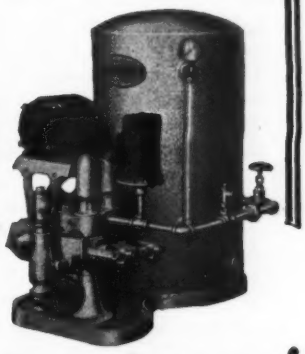
syndicate headed by A. McCreery and associates will finance the structure. The general contract has been let to Hodgson, King & Marble, 508 London building.

Cincinnati, O.—W. M. Firth, Gwynne building, has completed plans for an 18-suite apartment building, to be erected at Quatman avenue and Montgomery road, Norwood, by H. J. Lehman, 1010 Second National Bank building.

Oklahoma City, Okla.—A new $400,000 Wells-Roberts hotel will be erected here.

Indianapolis, Ind.—The heating and plumbing contracts on the $250,000 apartment building to be erected at

All-Galvanized--
Self-Lubricating--
PROFITABLE!



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They are made in galvanized or solid copper. Your jobber can supply you—or we can.

NO1
H. E. HESSLER CO.
Syracuse, New York

Pennsylvania avenue and Fifteenth street have been awarded to Roland M. Cotton, of this city.

Los Angeles, Calif.—An eight-story hotel and apartment building is projected for 1025 South Westlake avenue, which will contain 500 rooms and which will cost approximately $600,000. Richard A. Hill, 301 Chester Williams building, is the architect.

Los Angeles, Calif.—Working plans have been perfected for the immediate erection of the projected 500-room addition to the Biltmore hotel. The addition will be along the Olive street side of the present building and will cost about $3,000,000. Schultz & Weaver, of New York City, are the architects.

Los Angeles, Calif.—Plans have been completed and the contract let covering the 13-story and basement hotel at 960 Sixth street. The structure will contain 216 rooms with baths, besides the customary service accommodations. It will be of reinforced concrete construction and will cost about $500,000. L. A. Smith, Film Exchange building, Washington street and Vermont avenue, has completed the plans.

San Francisco, Calif.—The first unit of a 15-story Y. M. C. A. hotel building containing 400 rooms and costing $300,000, plans for which are about complete, will be under construction shortly. The building will be situated on Turk street, near Leavenworth, and when complete will cost about $800,000. Frederick H. Meyer, 742 Market street, is the architect.

Los Angeles, Calif.—A 13-story and basement apartment building of exterior marble and tile work, and to contain 320 rooms, will be erected at Wilshire boulevard and Irolo street at a cost of $150,000. Walker & Eisen, Western Pacific building, have prepared the preliminary plans.

Industrial

Los Angeles, Calif.—Preliminary plans for the proposed studio for the Mack Sennett Company have been completed by the Austin Co., and construction will be started shortly.

Milwaukee, Wis.—L. R. Stollberg & Co. has been awarded the plumbing contract on a $100,000 seed warehouse being erected in this city.

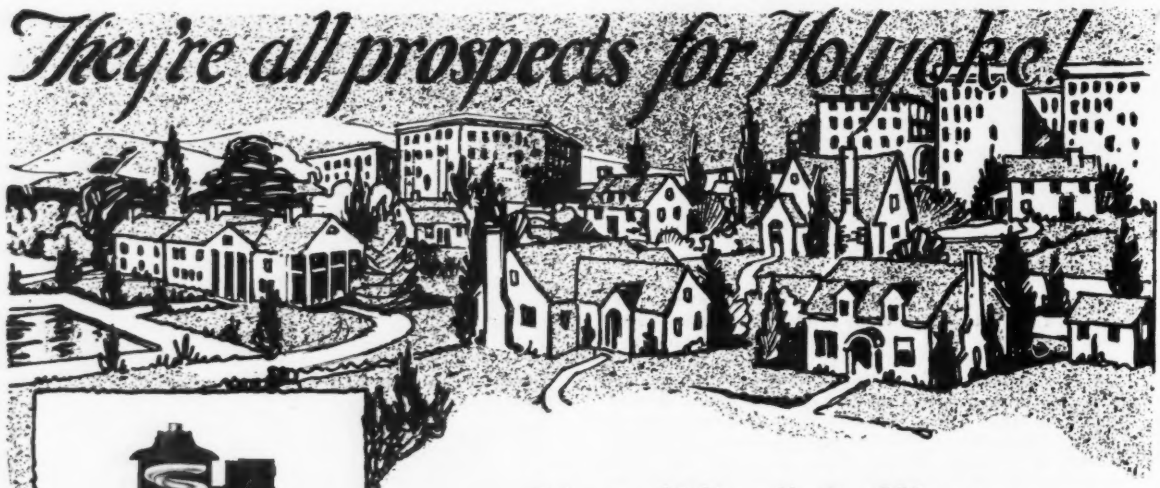
Houston, Tex.—George J. Robischung, Inc., has been awarded the plumbing contract on the New Houston Press publishing plant, to cost $600,000 when completed.

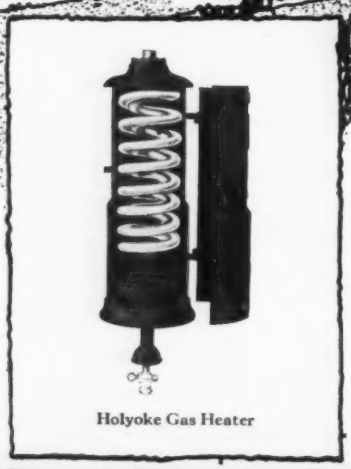
Los Angeles, Calif.—Ground was broken Saturday, July 30, for the proposed $4,000,000 plant for the Pacific Goodrich Rubber Co. The plant will rise at Industrial and Miles avenues and is expected to be completed by March 1, 1928. General contract and steel contract have been let, while the minor contracts will be let shortly.

Los Angeles, Calif.—Ground was broken August 1 for the five-story addition to the Safeway Stores, 1925 East Vernon avenue. The new building will cost $500,000 and will be utilized as a bakery. Cold storage rooms will be installed in the basement for the storage of perishable merchandise.

Santa Ana, Calif.—Construction on the proposed $150,000 bakery for the Kilpatrick Baking Co. was started during the last week in July. The new building will rise at the northwest corner of North Main street and Roe drive.

Eau Claire, Wis.—Plans are in progress for the erection of a $150,000 to $175,000 milk plant at Galloway and Putnam street here by the Eau Claire Milk Producers' Cooperative Association, Farmers' Store building.





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The New "Holyoke" Gas Heater not only embodies all the good features of the best gas heaters but has many other advantages that make it the most outstanding Gas Heater on the market today.

Gold Medal Awarded "Holyoke" Heaters Sesquicentennial International Exposition, Philadelphia, 1926

Holyoke Heater Company, Holyoke, Mass.

Churches

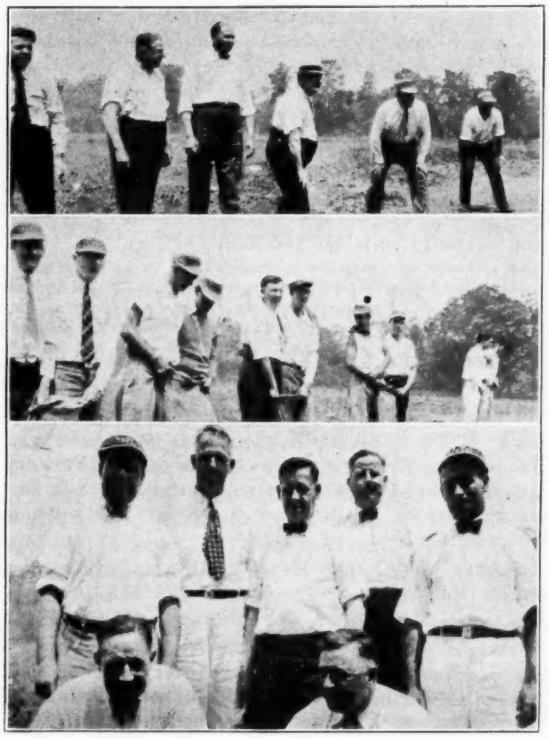
Baton Rouge, La.—The pastor and officers of the First Christian church here have announced a new church building will be erected. Guy E. Wilcox is president and Hunter Allen treasurer of the congregation.

Lake Charles, La.—Plans and specifications are now on the market for general contract bids for the proposed 3-story brick and cut stone trim church building to be erected at Broad and Kirkman streets for the Broad Street Methodist congregation. The estimated cost is $150,000. R. S. McCook, Lake Charles, has the plans on file. He is associated with Asmus & Clark, Nashville, Tenn., architects, on the project.

San Francisco, Calif.—Preliminary plans are under way by Architects Shea & Shea, 454 Montgomery street, for a class A church building, with a seating capacity of 2,000. The edifice will be located at Funston avenue and Judah street, and will cost approximately $250,000.

Oakland, Calif.—W. H. Weeks, Ray building, is working on preliminary plans for the new First Christian church, at Twenty-ninth and Fairmont streets. The church will have a seating capacity of 1,200 and will cost $250,000.

Los Angeles, Calif.—The general contractor for the new Immanuel Presbyterian church has applied for a building permit to construct a three-story steel, concrete and brick edifice at 3300 Wilshire boulevard, to cost approximately $600,000. C. F. Skilling and H. M. Patterson are the architects.

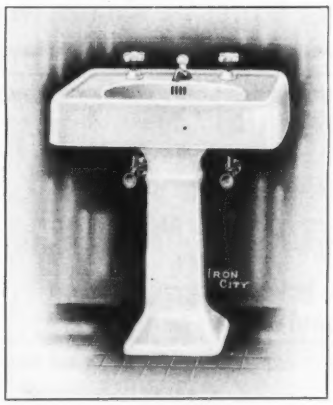


Top picture: Just before the start of the fat man's race.—Middle picture: Preparing for the three-legged race.—Bottom picture, left to right, kneeling: W. F. Kiley, Kohler Co., and E. H. Stepp, C. S. Mersick & Co.; standing, V. Eriesson, C. S. Mersick & Co.; A. W. Steedwell, Abendroth Bros., C. B. Whittlesey, C. S. Mersick & Co.; C. H. Knapp, contractor, Sound Beach; A. S. Grant, Abendroth Bros.—Photos taken at the recent annual outing of the Fairfield County (Conn.) Master Plumbers' Association

IRON CITY

Enameled Plumbing Fixtures

(BLACK AND GOLD LABEL)



Iron City 2020-A

Enameled Square Lavatory with apron, on Enameled Square Pedestal

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Strength!

Ravena Heavy Duty Cast Iron Flange Unions have that unusual strength so vitally needed for big jobs.

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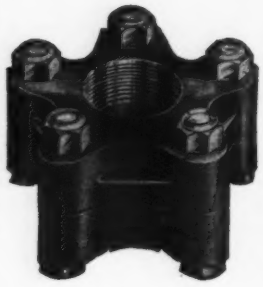

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Speakman Chromium Plate

SPEAKMAN COMPANY
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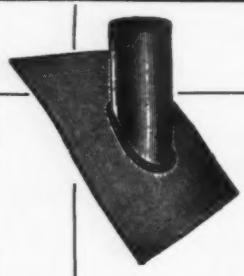

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Rathbun Basement Drainers give a certainty of service seldom found. They are sturdy, dependable and need practically no attention. They'll make money for you—give them a trial.

Write for particulars

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1036 Beaubien St., DETROIT, MICH.

Municipal and Government Work

Beloit, Wis.—The Witte-Newton Co. has been awarded the plumbing contract on the 5-story municipal hospital to be built in that city, to cost $175,000. Osborn & Klingberg, Beloit, have been awarded the contract for the steam heating.

Phoenix, Ariz.—The voters of Maricopa county having voted $750,000 for a new courthouse in this city, it is reported that the board of supervisors have disposed of the issue, which is taken to mean that construction will be under way very soon.

Burrillville, R. I.—The Public Welfare Department, State House, Providence, is asking for figures for the proposed $150,000 sanatorium addition to the Burrillville institution. Walter F. Fontaine, 285 Main street, Woonsocket, is the architect.

San Angelo, Tex.—The city commissioners have selected Trost & Trost of El Paso to draw plans for the city hall and municipal auditorium building, which will cost $250,000.

Theaters

Ruston, La.—This city is to have a new $100,000 theater building. Managers of the Astor theater here will inspect theater structures in several cities to gather data on the erection of a modern show house. Owners of the project and of the Astor theater are: J. B. Kendall and P. W. Baskerville, Jr., of Ruston.

San Francisco, Calif.—Burnham Plumbing Co., Inc., 1220 Webster street, and the Scott Co., Inc., 243 Minna street, have been awarded the plumbing and heating contracts, respectively, on the $500,000 theater building on Mission street, between Nineteenth and Twentieth streets.

Everett, Wash.—A theater for the Star Amusement Co., to cost $100,000, is being planned by Architects Doyle & Merriam, located in the L. C. Smith building, Seattle. This will be a fireproof structure 120x50 ft. ground dimensions and will seat 1,000. It is said that particular attention will be given to the ventilating system.

Clubs and Lodges

Appleton, Wis.—The Engle Heating Co. has been awarded the heating contract and Ryan & Long have been awarded the plumbing contract on a club house addition being erected in this city.

Penn Yan, N. Y.—A representative of New York, Chicago and Philadelphia clubmen is engaged here in securing property on which to build a $1,000,000 clubhouse, with aviation field, etc.

Fairfax, Calif.—The Meadow Club of Tamalpais will build a club building at a cost of about $125,000. John *White, 163 Sutter street, San Francisco, is the architect.*

Oakland, Calif.—Working drawings are nearing completion covering the $300,000, seven-story, steel and brick, Women's City Club building, to be situated on Alice street near Fourteenth. Miller & Warnecke, 1404 Franklin street, are the architects.

Utica, N. Y.—Trustees of the Masonic home are having plans made for several new buildings to be built in connection with the institution. These include two dormitories. A third building will be an infirmary for those who require hospital care. Additional room will also be provided for the administrative force. Kinne & Frank of Utica are the architects.

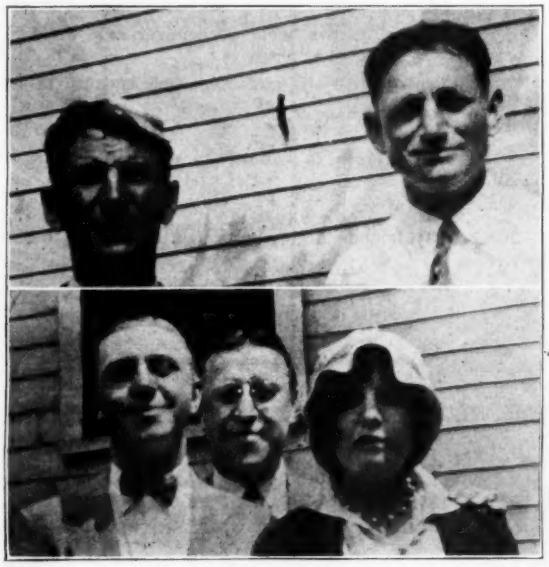
Schools

Racine, Wis.—The Paul E. Mueller Co., Milwaukee, has been awarded the heating contract on the William Horlick high school, being erected here. J. Mandor Matson is the architect.

Hurley, Wis.—The Twin City Heating & Plumbing Co. has been awarded the heating and plumbing contracts on a school addition being erected here.

Wichita Falls, Tex.—J. C. Korioth, of Sherman, has been awarded the heating contracts on the erection of additions to the Bowie school; the combined cafeteria and auditorium for San Jacinto school; the class room addition to Huey school; the addition to the Carrigan school, and the classroom and cafeteria addition to the Washington school.

Morgantown, W. Va.—The heating and plumbing contracts have been awarded to Alex Zeck & Son, 1036 University avenue, on the new Men's Field House at West Virginia University, on their bid of $20,300.



Top picture: George W. Pappert, captain of the winning ball team, and W. W. Hartman, leader of the losing team.—Bottom picture: Andrew Olsen, American Radiator Co.; C. W. Rich, Crane Co., and Miss Helen Fladd.—Photos taken at the recent annual outing of the Rochester (N. Y.) Master Plumbers Association

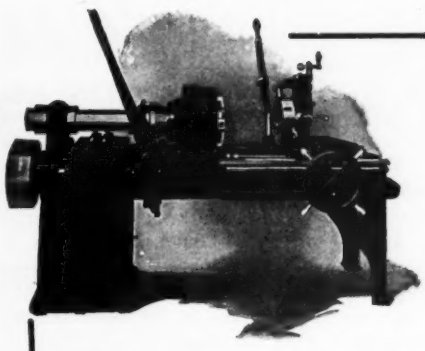
New Orleans, La.—Gore & Daubert, Inc., 835 Baronne street, have been awarded the plumbing contract on the Tulane Science Annex, at Tulane University.

Jackson, Miss.—The plumbing and heating contracts have been let to Hobbs Plumbing & Electric Co., Raye building, Meridian, Miss., on the main dormitory for the Mississippi Agricultural and Mechanical College, at Jackson.

Walla Walla, Wash.—William O'Rourke has been awarded the plumbing and heating contracts on the remodeling of and the addition to the Braden school.

Morrisville, Vt.—The board of education has commissioned William H. McLean, 88 Tremont street, Boston, Mass., to prepare plans for an academy to be known as the Peoples Academy. Specification will be drawn for a two-story structure, 66x145 ft., to cost $150,000.

Bridgeport, Nebr.—Bids will soon be taken by Z. H.



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Monarch single valve control definitely eliminates all confusion and makes mistakes impossible.

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MONARCH

Single Unit Control Valve Water Softeners

Jones, secretary of the board of education, for a two-story high school to cost $100,000. Meginnis & Schaumberg, Nebraska State Bank building, Lincoln, are the architects.

Collegeville, Minn.—The Hankee Heating Co., 925 Merchants National Bank building, St. Paul, has been awarded the plumbing and heating contracts on the new auditorium and music hall building to be built by the St. John's Catholic college, at a cost of $300,000.

Mountain View, Calif.—Plans have been completed for the Union high school, to cost $165,000. Gottschalk & Rist, Phelan building, San Francisco, are the architects.

Gridley, Calif.—Plans will be completed shortly by Davis-Pearce Co., architects, Grant and Weber streets, Stockton, for the new high school buildings, to cost $150,000.

Somersworth, N. H.—Willey & Calhoun, 46 Market street, Portland, Maine, have been awarded the heating contract for the high school to be constructed on Grand and Grove streets. Preliminary work on the project has been started.

Simsbury, Conn.—W. B. Carson, 230 Sargent street, Hartford, and Homer Tullar of Simsbury, have the heating and plumbing contracts for the proposed $125,000 dormitory to be built from plans by John C. Greenleaf of New York, for the Westminster school.

Hanover, N. H.—Bids are to be called for soon for a large dormitory building at Dartmouth College. J. F. Larson, architect, has drawn plans for a brick, steel and concrete building, 50x100 ft., four stories high. The project is estimated to cost $175,000.

Providence, R. I.—Contracts for the Junior high school addition and gymnasium units to be erected on Bridgeham street for the city at a cost of $200,000 were awarded recently. The general contract was awarded to E. Turgeon, 36 Exchange place, for $114,556; the plumbing contract to Thomas R. Douglas, 22 Sabin street, for $19,450; and the heating contract to the Taylor Heating Co. for $6,325.

Potsdam, N. Y.—This village has under consideration the erection of a new high school building, within the shortest time possible. This decision has been forced upon the taxpayers by the proposal of the state in demanding separation of the high school from the buildings and control of the Potsdam normal school, under which the high school has always been conducted.

Defiance, O.—The board of education of this city will erect a two-story auditorium and gymnasium, at a cost of $100,000. F. A. Bokop is clerk.

Epigrams—For Your Use

Lots of men who have seen trees never saw wood.

* * *

It is probably called the gift of speech because talk is cheap.

* * *

A man's conscience is usually more elastic than his suspenders.

* * *

Unless your friends are trumps, it's up to you to discard them.

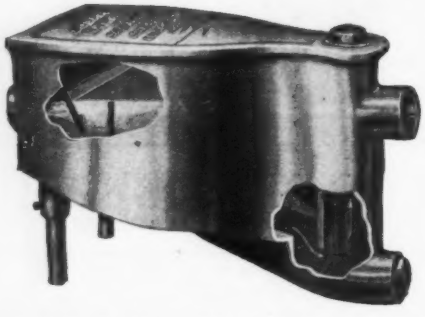
* * *

It's no disgrace to be poor—at least rich men say so.

* * *

Don't argue with facts. Auto drivers know the cost.

Josam Marsh **GREASE INTERCEPTORS**



Keep the waste pipes clean, completely extracting the grease from waste water regardless of water temperature. By evacuating the sediment from the grease the Interceptor is kept free from noxious odors.

Josam-Marsh Grease Interceptors are made with visible double-wall seal or integral seal in several sizes for service in individual home kitchens to those of the largest hotels and restaurants. As they are not water jacketed no involved cold water piping is necessary. Easily installed—portable—can be placed on, above or below the floor.

There are also Josam-Marsh Interceptors for Hair, Hospital Plaster, and Dental Surgical service.

Write for complete description and prices

The Josam Mfg. Co., 4904 Euclid Avenue CLEVELAND, OHIO

FACTORY: Canal Road, Michigan City, Ind.

RIDGID

And besides the unbreakable housing:

1 A powerful I-beam handle with handy hang-up hole in end.
2 Unbreakable full - floating jaw — a sure *grip at all* times.
3 Nut runs free in open housing.
4 Pipe-size scale on jaw.
5 YOU CAN'T LOCK IT ON A PIPE.
6 *Also made in* end pattern for tight places.

SIZES 6″ to 48″

UNCONDITIONAL GUARANTEE
If this Housing ever Breaks or Distorts we will replace it Free
THE RIDGE TOOL CO. ELYRIA, O.
TRADE RIDGID MAR

—if you break the housing— a new one FREE!

Isn't that the sort of wrench you want? One you can be sure won't get curvature of the spine, fractures or lock-jaw?

Well, that guarantee, affixed to every RIDGID Pipe Wrench, means just what it says. If you ever break or distort the housing you're entitled to a new one *FREE*.

Get Your RIDGID From Your Jobber.

THE RIDGE TOOL CO., Dept. D, Elyria, O.

RIDGID

PIPE WRENCHES VISES AND PIPE CUTTERS WRENCHES

READING PIPE
GENUINE WROUGHT IRON

THOS. SMITH & BRO.
MASTER PLUMBERS
ESTIMATE
Your Estimate for Steel Pipe
This estimate is based on the use of Steel Pipe. However, we believe because of its two to three times longer life, your interests would be much better served by an installation of
at an additional cost of only
$

Here's a new way to get more money for less work

THE next time you bid on a job requiring any amount of pipe, turn in *two* estimates. One in which you have based your price on steel pipe, the other to include an installation of Reading Genuine Wrought Iron Pipe. Try this plan out on all your 1927 bids and see what sort of reaction you get. You have nothing to lose and a whole lot to gain in adopting this alternative estimate. The steel pipe figure protects you against the low bidders while the "Reading" estimate gives you a real chance to "get more money for less work."

The time saved in cutting and threading Reading Pipe will add an extra profit that is impossible to earn on a steel pipe job of the same size. Less work, more money, and the satisfaction of having done a job that will prove a recommendation for further work.

The public knows why Reading is better than ordinary pipe and why it naturally costs more. Take advantage of this fact by submitting a quotation on "The Pipe That Endures."

All Reading Genuine Wrought Iron Pipe carries a spiral band of knurling—an identification visible even through paint or galvanizing.

Reading Nipples of Genuine Wrought Iron are positively identified by a band of knurling.

To
READING
IRON
COMPANY
Reading, Pa.

Please send me a supply of Two-Bid Stickers for use in submitting estimates.

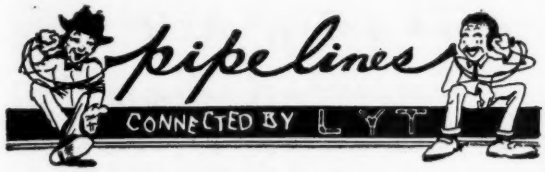
*Name*_____

*Address*_____

*City and State*_____

READING IRON COMPANY
READING, PA.
World's Largest Manufacturers of Genuine Wrought Iron Pipe

Baltimore, Boston, Buffalo, Chicago, Minneapolis, Cincinnati, Detroit, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, Cleveland, St. Louis, Shreveport, Tulsa, Seattle



THE TIME ELEMENT

"Good heavens! Who gave you that black eye?"
"A bridegroom, for kissing the bride after the ceremony."
"But surely he didn't object to that ancient custom?"
"No—but it was two years after the ceremony."

HAYSCO SPIGOT.

"SY" SEZ

He brings me flowers and candy
New music, too, and books,
He takes me out to dinner,
I much admire his looks.
We motor far together,
Beneath the starlit skies,
And stay till after midnight,
But none may criticise.

I hug him in the hallway
And kiss him at the gate,
We're going off to Europe,
But haven't fixed the date.
His money buys my dresses
(I'm always smartly clad),
But it is all quite proper,
Because—he is my dad.

"SY" MARTIN, Owensboro, Ky.

LYT'S PLATFORM FOR REFORMERS

It seems to me that the reforming industry is suffering from a lack of efficiency. I am, therefore, appointing myself as efficiency expert to the reforming industry. If there's any question about my appointing myself, answer me this—who in —— appointed the reformers?

Naturally the first thing an efficiency man does, is lay down a plan—a platform. Here's mine and now is the time for every good reformer to come to the aid of tyranny.

First Plank: Down with smoking. Let's do away with the pernicious corner cigar store, where fathers spend their nickels while sobbing children go without food and mothers have to smoke Chesterfields instead of Pall Malls.

Second Plank: Down with automobiles—excepting those used for snooping. Don't give any reasons. Just down with automobiles. There's something wrong somewhere, or so many people wouldn't enjoy owning autos. Down with them —and reserve a Cadillac for me as efficiency expert.

Third Plank: Down with handshaking. Every time two people touch hands 7,456,897,198,234 germs change hands. In the interests of efficiency, such a big germ turn-over must be cut down. Besides, the energy expended in shaking hands, if it were put to useful work, would move a train of cars fifty miles long a distance of one yard for every shake.

Fourth Plank, or Blanket: Down with everything which anybody enjoys. There's something wrong with the man who smiles and enjoys life. Find out what makes him happy and —down with it!

Let's organize for downing!

WHO?

Willie (at the zoo): "Gee, Ma, that monkey looks just like papa."

Mother (angrily): "Why, Willie, aren't you ashamed of yourself?"

Willie: "Aw, gee whiz, he can't understand what I said."

The man who used to "tie the bull outside" is now domesticated. He's "canning the applesauce."

It's one thing to get up at four o'clock to play golf. But to answer the telephone——!

L Y T.

CLE-BAR

Any Pressure
UP TO 500 POUNDS

Cle-Bar Service Water Heaters will stand any pressure up to 500 pounds.

They will supply clean, hot water to all jobs they serve.

Leading clubs, hotels, apartments, commercial buildings and homes use Cle-Bar.

CLEGHORN COMPANY
54 Batterymarch St. Boston, Mass.

The *Profitable* Sprinkler Line—

C. S. B.

C. S. B. Sprinkler Heads can be purchased direct from the manufacturer in any quantity, any temperature or coated.

C. S. B. also manufactures alarm valves, dry valves, retarding chambers, circuit closers, water motors, gongs and covers, sight drips, ball drips, sprinkler guards, cabinets, wrenches and a complete line of sprinkler equipment.

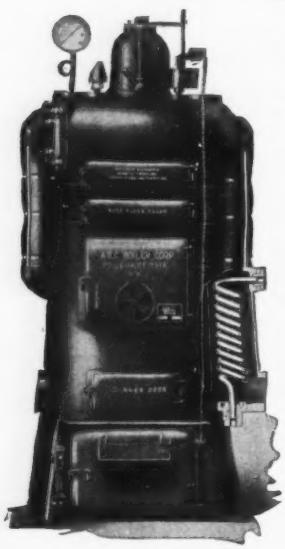
C. S. B. Sprinkler Co.
54 BATTERYMARCH ST.
BOSTON :: MASS.

The Home and its water supply heated · in a single operation

(One of the Exclusive ABCO Features)

A properly heated house and at the same time clean hot water for the domestic water supply. A patented ABCO feature makes this possible in a simple, practical way. *This exclusive improvement, found* only in ABCO Round Boilers, is the last word in efficiency. No firepot coils to burn out—no waste of heat—no slipshod hookups.

The copper heating coil is built in between the castings of the waterway and although actually in the firepot it does not come in contact with either flame or fuel. This coil is easily removable if desired. It is guaranteed to fully heat a 30 to 50 gallon tank every three hours. It eliminates 93% of the heat waste caused by outside hookups, thus upkeep is less.



There are many other improvements in the NEW ABCO that are not found in any other boiler regardless of price. Send the coupon below for booklet explaining the exclusive selling advantages of ABCO ROUND BOILERS.

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202 Fulton St.
POUGHKEEPSIE :: N. Y

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Send me Free Book giving complete information about the fast selling ABCO, also prices.

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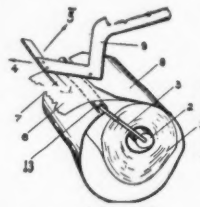
.....

Jobber's Name.....

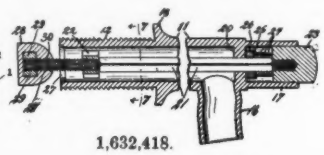
PATENTS

Plumbing Department

1,632,455. Sanitary Toilet Cover. William Stelzer, Chicago. In a device of the class described a sheet metal *helical casing formed of one piece and open at the sides, a* paper roll incased in said casing provided with resilient arms attached to the casing to permit the roll to be removed from the casing, a bracket secured to the under side of the toilet seat, said bracket having a cutting bar attached to the forward edge, and means for attaching the helical casing to the bracket.



1,632,455.

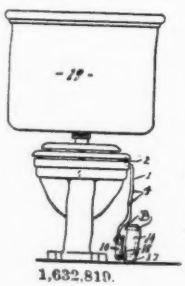


1,632,418.

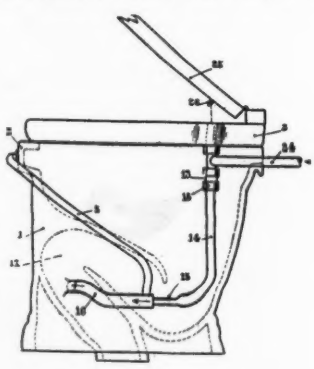
1,632,418. Faucet. Leonard Ruegg, Los Angeles, Calif. A faucet having a hollow casing with a valve seat formed on the inner end thereof, a straight spring-held valve stem *longitudinally movable* centrally in said casing and threaded at its inner end, means for preventing the valve stem from turning in the casing, an imperforate valve made of rubber and the like and an angular nut embedded in and enveloped by said valve with the major thickness of the valve extending inward beyond the nut and surrounding the valve stem so that the nut is not removable therefrom and is adapted to screw on the threaded end of the valve stem and is behind the main portion of the valve that engages the valve seat, substantially as set forth.

* * *

1,632,819. Seat-Actuating Means for Sanitary Closets. William E. Chastain, Wichita, Kans. In a seat actuating means for sanitary closets, in combination with a seat of a sanitary closet, an arm pivotally connected to the closet near the hinged point thereof, the opposite end pivotally connected to the arm of a bell crank, a bell crank pivotally attached to the floor by the side of the closet, a pedal engaging with the opposite end of the bell crank, so that the end thereof will reciprocate on each side of the ful-



1,632,810.



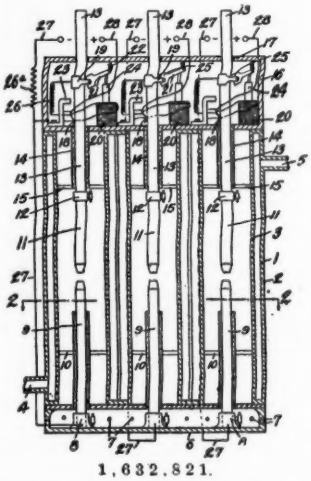
1,632,791.

crum of the crank, a slotted tube attached to the pivotal *bearing so that one arm of the bell crank will engage* in the slot, a recoil spring positioned in the tube to function as a cushion for the bell crank, adjustable supporting means for the spring longitudinally in the tube, all as, and for the purpose described.

1,632,791. Ventilation of Water-Closet Pans. Sylvain René Habault, Neuilly-Sur-Seine, France, assignor to Societe D'Hygiene Pratique, Paris, France. In a device for effecting the automatic internal ventilation of a closet pan, the combination with a pan having a siphon in the bottom thereof; of an apertured boss integral with the top of said pan, the inner walls of said boss being arranged *tangentially* to the inner surface of the pan, an outlet pipe connected to said boss and siphon, a valve casing, a normally closed valve therein, means to open said valve when the seat of the pan is lowered, water supply means for supplying water to said casing when said valve is opened, and a discharge tube connected to said casing and to said outlet pipe and through which the water flows from said *casing to create a suction in said outlet pipe.*

* * *

1,632,821. Electric Water Heater. Alfred Cote, Montreal, Quebec, Canada. An electric water heater comprising a transverse casing provided with sockets; a plurality of water casings mounted on said transverse casing having inner and outer walls; a control casing mounted on the upper ends of said water casings and having a plurality of sliding rods therein; a negative carbon for each water



1,632,821.

1,632,631

casing mounted within said inner wall in the socket of said transverse casing; a positive carbon for each water casing mounted within said inner wall in the sliding rod, said carbons being in alignment with each other; and means in said control casing for operating each of said sliding rods in order to maintain an arc across the ends of the carbons.

The Baltimore Quality Line

PLUMBERS' CAST BRASS GOODS

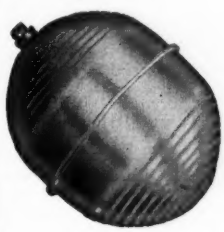
BALTIMORE VALVE CORPORATION
BALTIMORE, MD.

BULLARD Roof Flange

The Bullard Roof Flange is exceptional in its simplicity and practicability. It will fit any angle roof from flat to one-half pitch and is extremely easy to install. Bullard Roof Flanges are moderate in cost and they will give lasting satisfaction.

Write for catalog

THE BULLARD SPECIALTY CO., Tiffin, O.



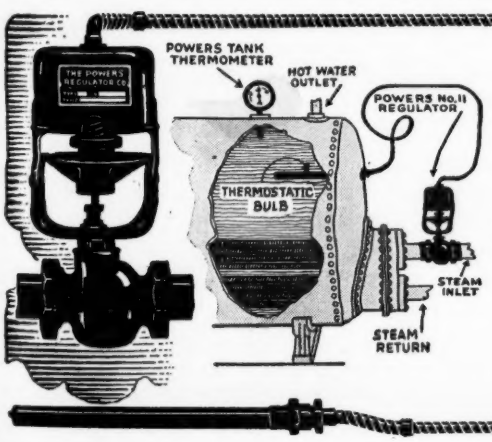
"TOLEDO" Solderless Floats

stay tight as long as the metal lasts. Carefully made from the purest copper and individually tested before packing.

You can't get better floats at any price.

Write for quotations—NOW.

The Reichert Float & Mfg. Co.
2238 Smead Avenue Toledo, Ohio



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You can make a two-way profit every time you install a Powers Automatic Temperature Regulator.

(1) In cash. A good profit margin—all yours. A Powers Regulator is easy to install, and troubleproof. No callbacks.

(2) Because ACCURATE, adjustable to various temperatures, dependable, and long wearing, the Powers Regulator gives complete satisfaction. Customer good-will built on satisfactory service is your biggest asset.

Your market for this profitable staple is growing from year to year. Write for illustrated descriptive bulletin.

THE POWERS REGULATOR CO.
36 years of specialization in temperature control
2716 GREENVIEW AVENUE, CHICAGO. Also New York, Boston, Toronto and 31 other offices. See your telephone directory. (3258)

INSURANCE
AGAINST FLOODED BASEMENTS

SIGNET TRADE MARK REG. U.S. PAT. OFF.

Where the Signet Drain is installed there can be no back water.
A perfectly reliable trap that automatically keeps out sewage, gas and germs.

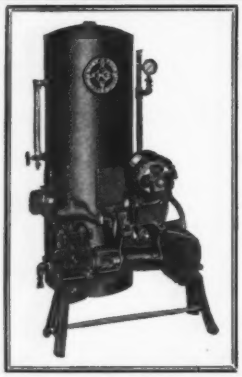
Always works. Nothing to get out of order. Brass working parts submerged.

The Signet is clean, sanitary, simple, durable and efficient.

Pat. Dec. 3, 1914

Write for Details

Crampton-Farley Brass Co.
Kansas City, Mo.



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MANUFACTURING PUMPS

The BUCKEYE Electric House Pump is the product of all these years of experience.

DOUBLE GEAR DRIVE
PERFECT ALIGNMENT
RUNS IN OIL—NOISELESS
AUTOMATIC OPERATION
EFFICIENT

Write for bulletin and prices today

MAST FOOS & COMPANY
Box 401, Springfield, Ohio

The STINSON Patent Equalizing Valve

A system designed to prevent Water Hammer and any reaction in the water supply system in the building. If properly installed, the Stinson Equalizing Valve is guaranteed to completely and thoroughly remove any vibration in water pressure systems of piping.

The Valve is made in sizes as conditions require.

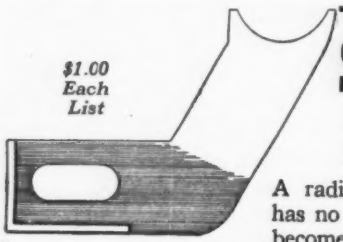
Stock sizes: 1¼ and 2½ inch.

1¼ inch will take care of from ¾ inch to 2 inch supply.

2½ inch will take care of from 2 inch up to 4 inch supply.

Send rough sketch of piping in basement and I will advise you the proper place to install the equalizer.

Robert Stinson, 1632 Forbes Street, Pittsburgh, Pa.



$1.00 Each List

SHANKLIN
RADIATOR BRACKETS

A radiator bracket that has no bolts or screws to become lost or to cause confusion when installing is what you are offered in Shanklin Radiator Brackets. The time they save will more than double the discount allowed you when purchasing.

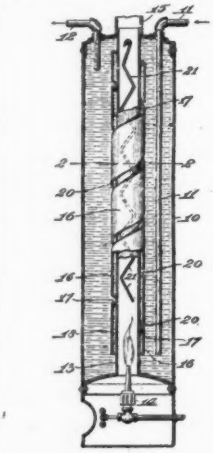
Write for the West Virginia catalog

West Virginia Heating & Plumbing Co.
Charleston, W. Va.

1,632,631. Valve Guide for Flushing Tanks. Charles M. Smith, Waco, Tex., assignor of fifty-one per cent to Francis M. Compton, Waco, Tex. In combination with the discharge pipe and the valve and valve seat of a flushing tank, a plug in the valve having upper and lower threaded portions, an upper guide rod threaded into engagement with the upper threaded portion of the plug, a lower guide rod having upper and lower threaded ends, the upper of which ends is threaded into the lower threaded portion of the plug, a nut adjustably threaded onto the lower threaded end of the lower guide rod, a cage composed of a series of wires secured to the nut at their upper ends and having intermediate angular parts, the wires being secured together at their lower ends, the angles of the wires forming a series of guides which engage the discharge pipe throughout its inner circumference and a lock nut on the threaded part of the lower guide rod for holding the first named nut in its adjusted position.

* * *

1,632,888. Water Heater. Lewis F. Davis and Louis W. Schnepp, Huntington Beach, Calif. In a device of the character described having a water containing tank and a heating flue extending vertically therethrough, the combination with said heating flue of a restricted duct spirally disposed around said flue, said duct having a restricted opening extending along its lower edge and through which restricted opening the duct has exclusive communication with the tank contained water.



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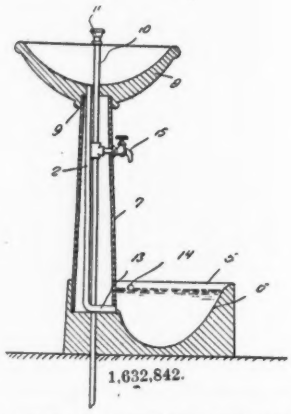
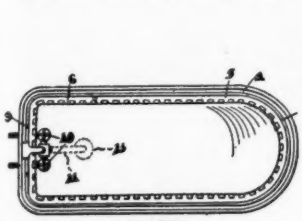


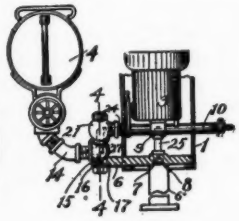
1,632,842.

1,632,842. Combined Drinking Fountain and Animal Trough. Henry A. Liening, Detroit, Mich. A combined drinking fountain and animal trough of the class described, comprising a base having a trough formed in its top side, a vertically extending tube having its lower end set within the base at the rear side of the trough, a fountain bowl, a socket formed on the bottom of said bowl, the upper end of said vertically extending tube being fitted in said socket for supporting the fountain bowl on the upper end of the tube, a water supply pipe extending vertically through the base, the tube, and the bowl, a drinking nozzle on the upper end of the pipe, an additional pipe arranged vertically within the tube, the upper end thereof communicating with the bottom of the bowl, the lower end of the pipe being disposed laterally for communication with the trough whereby the trough may be filled by the overflow from the nozzle which is discharged into the bowl, and a faucet associated with the water supply pipe and arranged on the outside of the vertical tube above the trough whereby the trough may be initially filled independently of the overflow from the aforementioned nozzle.

1,633,582. Bathtub. Charles T. E. Gould, Toronto, Ontario, Canada. A rim member for a bathtub having a main waterway and an auxiliary waterway, said waterways being separated by a rib over which water may flow from the main waterway into the auxiliary waterway, said rib having a restricted passage formed therein through which the main waterway may be drained; and a water outlet from said auxiliary waterway.



1,633,582.

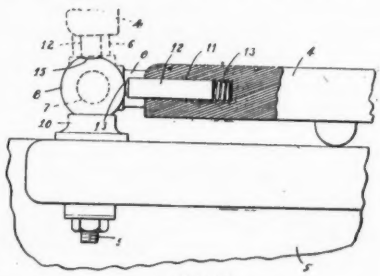


1,633,716.

1,633,716. Burner for Hot-Water Heaters. Peter S. Sinclair, Holyoke, Mass. In a burner, a burner element, a bearing plate for supporting the burner, said plate having an arc-shaped groove therein and an opening concentric with said groove, an oil supply pipe on which the burner element is mounted, pivotally secured in the opening in the bearing plate, and a support for the burner element secured to the oil supply pipe and disposed in the arc-shaped groove.

* * *

1,633,281. Toilet-Seat-Hinge Mounting. Emil J. Nielsen, Rockford, Ill., assignor to Phenolic Products Corporation, Rockford, Ill. The combination with a toilet seat having hinge arms projecting from the back thereof, and posts for hingedly mounting the same on a toilet bowl, of

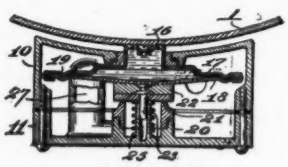


1,633,281

a plunger bore provided in said seat opening on the rearward side thereof in line with one of the aforesaid posts, and a spring-pressed plunger received in said bore and extended therefrom into frictional engagement with said post for yieldingly restraining the seat in its swinging movement to and from lowered position and for retaining the same in raised position.

* * *

1,633,908. Thermostatic Valve. Louis W. Schnepp, Huntington Beach, Calif., assignor, by direct and mesne assignments, to First National Bank of Anaheim, trustee



1,633,908.

for Snap-O-Stat Company, a copartnership, Anaheim, Calif. In a thermostatic valve, a housing having a port, an expansible fluid containing diaphragm arranged within said housing, said diaphragm comprising a pair of disks,

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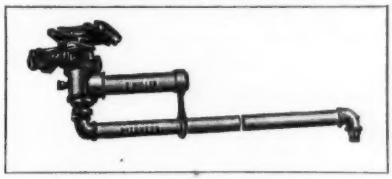

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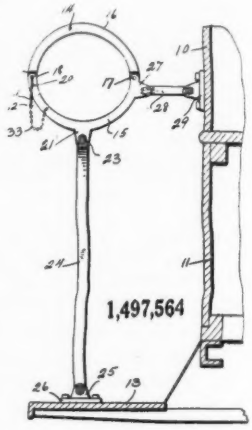
one of which is normally dished against the other, a valve adapted to be engaged by said diaphragm when the same is expanded and moved into position to close said port, a bushing in the rear wall of the housing and a hollow cup-shaped member projecting from one of the walls of the diaphragm through said bushing so as to make direct contact with the tank to which the valve is applied.

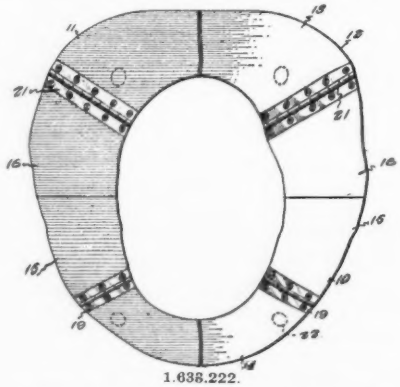
* * *

1,497,564. Pipe Support for Vehicles. Thomas G. Howells, Girard, Ohio. In a pipe holder for trucks, a pair of substantially semi-circular sections pivoted together at one end and provided at their free ends with inter-engaging portions, having openings aligned when the sections are in close relation for the reception of a securing element, one of said sections having formed thereon a pair of ears, links pivotally connected to said ears and attaching plates having ears pivotally connected with the free ends of the links and adapted for attachment to the outer surface of the truck body.



* * *

1,633,222. Auxiliary Toilet Seat. Esther M. Noble, Boise, Idaho. An auxiliary toilet seat including a pair of lateral sections, each section comprising two end segments and two intermediate segments, a hinge connecting the adjacent ends of the intermediate segments of each section at one side of the segments to provide for relative folding of said segments to position with their said slides in contact, a hinge connecting each intermediate segment of each section with the adjacent end of the respective end



1,638,222.

segment, at the opposite side of the segments to provide for relative folding of the end segments, with relation to their respective intermediate segments, to position with their sides, at which the hinges are located, in contact, and means upon the respective end segments of the two sections for separately connecting the same to each other.

Buffalo, N. Y.—Loblaw Groceries, Inc., will construct a brick and concrete warehouse and factory at 166 Chandler street, to cost $100,000.

Syracuse, N. Y.—John Single, contractor, has begun the foundation for a new warehouse and office building for the wholesale grocery firm of Flickinger-Hudson, Inc., in Tully street. The new building will cost $100,000.

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WANTED—SALESMAN FOR NEWARK, N. J., and vicinity. Must be heating sales engineer. Desire man with acquaintance among wholesalers. Address Key 904, "Domestic Engineering," 1900 Prairie Ave., Chicago.

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TREASURY DEPARTMENT, SUPERvising Architect's Office, Washington, D. C., Aug. 12, 1927.—*Sealed proposals* will be opened in this office at 3 p. m., August 31, 1927, for removing the present water supply piping and furnishing and installing new brass water supply piping at the United States post office, ct. h. & cu. h., New Haven, Conn. Drawings and specifications may be obtained from the custodian, U. S. post office, New Haven, Conn., or from this office in the discretion of the Supervising Architect. *Jas. A. Wetmore, Acting Supervising Architect.*

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PRACTICAL METHODS OF SEWAGE DISPOSAL. By H. N. Ogden and H. B. Cleveland. Covers in detail the problem of sewage disposal for residences, hotels and institutions where connections to city sewers are not available. Size, 5¾x9¼ in. 132 pages. Cloth. Price, $1.50.

STANDARD PRACTICAL PLUMBING. By R. M. Starbuck. An exhaustive treatise on all branches of plumbing construction, including drainage and venting, ventilation, hot and cold water supply and circulation. Shows the latest and best plumbing practice, special attention being given to the skilled work of the plumber *and to the theory* underlying plumbing devices and operations. Contains 347 original illustrations, each drawn expressly for this work. A book every master plumber should have in his trade library. Size, 6x9 in. 406 pages, bound in cloth. Price $3.50.

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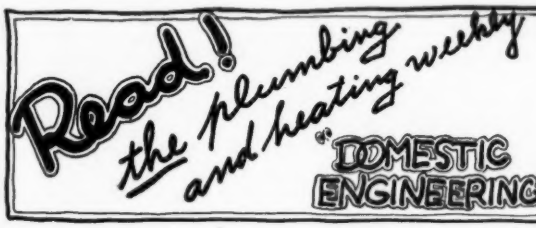

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